

# 2000 LOWER DESCHUTES BOATER SURVEY REPORT

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## TABLE OF CONTENTS

INTRODUCTION AND NEED	1
PURPOSE	2
METHODOLOGY	2
RESULTS	3
CONCLUSIONS	12
IMPLICATIONS	15
LITERATURE CITED	30
APPENDIX A: ADDITIONAL METHODOLOGIES	31
APPENDIX B: SMALL, MEDIUM AND LARGE CROSSTABS RESULTS	34
APPENDIX C: RAW FREQUENCIES WITH SURVEY	53
APPENDIX D: SURVEY CARD INSTRUCTIONS	58

## LIST OF TABLES

Table 1: Boater Characteristics	18
Table 2: Boater Preferences	20
Table 3: All User Responses	21
Table 4: Camper Responses	22
Table 5: Day User Responses	25
Table 6: Management Issues	26
Table 7: Limiting Use	28
Table 8: Limited-Entry Permit System	29

## Introduction and Need

The Lower Deschutes River is located in north central Oregon. Beginning at the Pelton Reregulating Dam (Lake Billy Chinook Reservoir), the Lower Deschutes flows north to the Columbia River. This 100-mile stretch of river was initially designated a State Scenic Waterway in 1970. In 1988 this same stretch of river was designated by the U.S. Congress as a National Wild and Scenic River and was further classified as a “Recreation” river. The river presently receives about 250,000 recreation visits per year, approximately 140,000 of which are boaters.

In the early 1990s the federal, state, local, and tribal managing agencies of the Lower Deschutes joined efforts to develop the 1993 Lower Deschutes River Management Plan (LDRMP) and Environmental Impact Statement (EIS). This document was later updated and amended in the 1997 Supplement to the Lower Deschutes River Management Plan.

The 1993 LDRMP specified the collection of baseline data needed to implement, monitor, and adjust the Plan. The LDRMP focused on the Limits of Acceptable Change (LAC) process to identify changes in ecological and social conditions, and “...determine whether or not the implementation of plan provisions are having the desired effect” (p. 88). The 1993 LDRMP further stated “A comprehensive all user survey will be implemented to determine the characteristics of the users of the Deschutes River, their opinions about the Deschutes River and the size of the user population” (p. 89). Additional monitoring requirements specified the administration of a short verbal survey of visitors during the primary use season focusing on the quality and type of recreation experienced.

By the spring of 2000 no social studies had been conducted on the Lower Deschutes River as specified by the LDRMP. The most recent social data came from a study conducted in the late 1980s by Shelby, Whittaker, Speaker, and Starkey, *Social and Ecological Impacts of Recreation Use on the Deschutes River Scenic Waterway* (1987). Along with ongoing monitoring requirements, Prineville Bureau of Land Management (BLM) officials were interested in obtaining social data in preparation for the possible implementation of a limited-entry permit system (as specified by the LDRMP if boater use targets are exceeded) and/or additional non-permit measures.

Therefore, in the summer of 2000 the BLM initiated the current study, titled the *2000 Lower Deschutes Boater Survey Report*. Faced with a shortage of money, time, and staff, agency officials focused on that portion of the boater population who would be most affected by the implementation of additional regulatory measures - summer weekend boaters in Segments 1 and 2. These boaters were (1) the individuals most likely to be denied access under a limited-entry permit system, and (2) the individuals whose recreational experience was most likely to be impacted by high densities of recreational use. This approach was consistent with the LDRMP which stated problems concerning the management of nonmotorized recreational activities were “most evident during weekends in the summer and early fall” (LDRMP, p. 15). The agency recognized that if a limited-entry permit system were to be implemented on the Lower Deschutes, it would affect all members of the boater population, and impacts to all users would have to be considered.

## Purpose

The primary purpose of this study was to provide baseline social data concerning the managing agencies most pressing issues, namely the implementation of a limited-entry permit system and/or additional non-permit measures. The secondary purpose of this study was to provide an updated Lower Deschutes River boater profile. In alignment with the primary purpose, the expected primary audience of this report included agency personnel, members of the Lower Deschutes Working Group, and other interested commercial and governmental parties. These groups were expected to possess a high prerequisite knowledge of the river, and a correspondingly high interest in, and tolerance for, sophisticated statistical analyses. While this study is not all-inclusive, it provides an updated snapshot of Segment 1 and 2 peak season boater characteristics, preferences, and reactions to present management actions, and potential future management actions that may be implemented on the Lower Deschutes River.

## Methodology

### **Survey Administration**

This survey was conducted during the summer peak-use period on the Lower Deschutes River, between 7/5/2000 and 9/10/2000, primarily on weekends. The study was conducted only on Segment 1 (between the Warms Springs boat launch and the Deschutes Club Locked Gate) and Segment 2 (between the Deschutes Club Locked gate and Sandy Beach). Study participants were initially contacted at launching and take-out ramps, and asked for personal contact information. At a later date, surveys were mailed to participating individuals for completion and return to the agency. Additional survey administration specifics can be found in Appendix A.

### **Survey Design**

Survey questions were developed from two sources. The primary source was a pool of questions collected by the Alan Watson and the Aldo Leopold Wilderness Research Institute, Baseline and Trend Information on Wilderness Use and Users, OMB clearance #0569-0108. These questions were slightly modified for boaters. Additionally, questions from the 1983 and 1987 Lower Deschutes boater surveys were also utilized. Additional survey design specifics can be found in Appendix A.

### **Data Analysis**

Beyond a simple distribution of variables, this report includes numerous crosstabulation comparisons (crosstabs). Crosstabs examine the relationship between two or more variables. Analyses here compared independent and dependent variables, and included tests of significance and effect size.

A test of significance indicates if the differences between row and column variables are statistically significant (referred to as statistical independence). The Pearson Chi-Square ( $\chi^2$ ) and Significance (p) statistics compare expected cell frequencies with the actual values found in the table - if large differences are found (as indicated by small Significance values ( $p < .01$ ) and large Chi-Square values), the variables are said to be statistically independent. However, these statistics indicate nothing about the extent, or the strength, of the independence between the row and

column variables, referred to as effect size. To describe the extent of the independence, the Cramer's V ( $\phi$ ) statistic was also utilized. Utilizing the Cramer's V statistic, each statistically significant comparison was further analyzed and broken into small, medium, and large subsets for easier comparison and analysis. Additional data analysis specifics can be found in Appendix A.

A test for non-response bias was completed. Participant contact location, type of use, segment boated, state of mailing address, primary activity, and surveyor were examined. Results are provided in the beginning of the Results Section.

## Results

### **Introduction**

The results section is broken into eight subsections, each with a corresponding table found at the end of the main body of this report. Most tables are broken out by overall response, and by segment (Segment 1a, Segment 1+2, and Segment 2). Segment 1a respondents boated between Warm Springs and Trout Creek only. Segment 1+2 respondents launched in Segment 1 and traveled into Segment 2. Segment 2 respondents boated between Long Bend and Sandy Beach. Included with each response is the number of people responding to that specific question, referred to as the sample size(n). Note for each question the number of segment-specific respondents do not add up to the overall sample size because some boaters failed to provide a usable put-in and take-out location.

Questions 4 and 8 in Table 1 and Question 3 in Table 6 include average and median statistics. The average is the sum total of a set of responses, divided by the number of responses. For example,  $2+4+12=18/3=6$ . The average can be strongly affected by a few very large responses. The median is the middle value within a set of responses. The median of 2, 4, and 12, is 4.

Many tables are alphabetically footnoted. These footnotes indicate statistically significant crosstab results with large effect sizes (see previous section for explanation). Appendix B includes crosstab results with small, medium, and large effect sizes.

Table 3, Question 2 provides survey results from the historically utilized 1 to 9 crowding scale. To simplify explanation and analysis, the 1 to 9 scale has been collapsed into 3 categories. The not-at-all to slightly crowded response was constructed from responses 1, 2, and 3 from the 1 to 9 scale. The slightly to moderately crowded response (collapsed from 4, 5, and 6) and the moderately to extremely crowded response (collapsed from 7, 8, and 9) were similarly constructed.

### **General Characteristics**

Half (50%) of study participants returned a survey. Of the 610 surveys initially mailed out, 28 were returned because of an undeliverable address. 293 total surveys were completed and returned, however, only a limited number of respondents (20) were identified as having boated Segment 1a.

Results from a non-response bias test indicated differences between those who returned a survey and those who failed to return a survey were not statistically significant in regard to six different parameters including: Participant contact location, type of use, segment boated, state of mailing address, primary activity, and surveyor.

Overall, 72% of the sample was male. The average sample boater was forty years old, had completed an undergraduate degree, and lived in a household with an income of between \$50,000 and \$70,000. Ninety-four percent of respondents were white and not of Hispanic origin. Fifty-nine percent of respondents completed the overnight camping section of the survey.

### **Boater Characteristics (see Table 1)**

Nine percent of the sample boated Segment 1a only, 47% boated Segment 2 only, and 44% of the sample boated Segment 1+2.

Almost half (44%) of sample boaters used their own boat, a family boat, or a friend's boat. Forty-one percent of boaters rented a boat. The remaining 15% of sample boaters used a boat on a commercially-guided trip. Within Segment 1a the majority of boaters (70%) used their own boat, a family boat, or a friend's boat. However in Segment 2, more boaters (49%) rented a boat. Segment 1+2 boaters were almost evenly split (51%, 44%) between using their own boat, a family boat, or a friend's boat, and renting a boat. Sixty-five percent of those who boated four or more times used their own boat ( $\chi^2 = 59.64$ ,  $p < .001$ ,  $\phi = .457$ ). Fifty-three percent of boaters whose primary activity was fishing used their own boat ( $\chi^2 = 28.33$ ,  $p < .001$ ,  $\phi = .317$ ). Forty-three percent of first-time boaters used a boat on a commercially-guided trip ( $\chi^2 = 39.26$ ,  $p < .001$ ,  $\phi = .383$ ).

More than three-quarters (77%) of sample boaters described themselves as non-commercial, family and friends. Eleven percent of boaters described themselves as a passenger on a commercially-guided trip, while 3% of respondents described themselves as a commercial guide. Eight percent of boaters identified themselves as being part of an organized group, including Scouts, church, school, or park and recreation groups. The last 1% reported boating on a solo trip. Within the three segments, the vast majority of boaters continued to identify themselves as non-commercial, family and friends. However Segment 1a boaters included significant numbers of passengers on commercially guided trips (26%). Segment 2 boaters included those boating with an organized group (11%) and those on a commercially-guided trip (9%). Segment 1+2 boaters were largely non-commercial family and friends (87%).

The sample group size averaged 9.7 people, with a median of 8.0 people per group. Segment 1a boaters visited with an average group size of 3.3, with 70% of these boaters visiting in the group of 1-4 ( $\chi^2 = 27.32$ ,  $p < .001$ ,  $\phi = .351$ ). Segment 1+2 boaters visited with an average group size of 9.3, and a median group size of 7.0. Segment 2 boaters visited with an average group size of 11.3, and a median group size of 8.0. Fifty-three percent of boaters whose primary activity was fishing visited in a group of 1-4 ( $\chi^2 = 28.33$ ,  $p < .001$ ,  $\phi = .317$ ). Thirty-four percent of renters visited in a group of 9-16, 14% of renters visited in a group of 17-24 ( $\chi^2 = 31.00$ ,  $p < .001$ ,  $\phi = .330$ ).

More than three-quarters (79%) of boaters reported fishing was not their primary activity. However Segment 1a boaters were dramatically different than the rest of the sample with 85%

responding fishing was their primary activity ( $\chi^2 = 47.21$ ,  $p < .001$ ,  $\phi = .463$ ). Only 1% of Segment 2 boaters responded fishing was their primary activity ( $\chi^2 = 48.74$ ,  $p < .001$ ,  $\phi = .471$ ). Thirty-two percent of Segment 1+2 boaters responded fishing was their primary activity.

Sample boaters averaged 5.0 visits to the Lower Deschutes in the previous 12 months, and a median of two visits in the previous 12 months. Within the three segments, Segment 1a boaters visited most often, (average of 8.3 visits/last 12 months), Segment 1+2 boaters visited second-most frequently (average 6.3 visits/last 12 months), and Segment 2 boaters visited the least frequently (3.9 visits/last 12 months). However, these figures are being affected by a few individuals reporting very high rates of visitation. Median responses confirmed Segment 1a boaters did visit more frequently, but to a lesser extent (3.0 visits versus 2.0 visits in the previous 12 months). Respondents were also asked about other rivers they had boated in the past twelve months. The top five rivers included the Rogue (9%), the McKenzie (9%), the Clackamas (8%), the Sandy (5%), and the Santiam rivers (5%).

Sample boaters averaged 12.3 years of boating experience, however the median response was only 10.0 years. Segment 1+2 boaters reported boating for the greatest number of years (average = 15.6 years), Segment 1a boaters were second (average = 12.7 years), and Segment 2 boaters were the least experienced with an average of 11.5 years of boating experience.

Survey respondents varied as to how far in advance they determined their launch date. Only 2% of boaters determined their launch date one day in advance of boating. About one-fifth (19%) of respondents determined their launch date 2 to 7 days in advance. One-third (33%) of respondents determined their launch date from 8 to 30 days in advance. Twenty-nine percent of respondents determined their launch date from one to three months in advance. One-tenth (10%) of respondents determined their launch date from three to six months in advance. The remaining 7% determined their launch date more than six months in advance. Within the three segments, more than half (52%) of Segment 1a boaters determined their launch date 2 to 7 days in advance. The greatest percentage (39%) of Segment 2 boaters determined their launch date 8 to 30 days in advance. More than half Segment 1+2 boaters determined their launch date either 8 to 30 days (32%), or 1 to 3 months (33%), in advance. Twenty-eight percent of renters determined their launch date three or more months in advance ( $\chi^2 = 26.96$ ,  $p < .001$ ,  $\phi = .309$ ).

### **Visitor Preferences (see Table 2)**

Survey respondents were asked about why they boat the Lower Deschutes, and the relative importance of eight of those reasons are provided in Table 2. Utilizing crosstabulation analysis, a number of strong differences were observed within the sample. In examining the importance of running rapids, 75% of Segment 1a boaters responded running rapids was not, or slightly important ( $\chi^2 = 75.30$ ,  $p < .001$ ,  $\phi = .585$ ). Eighty-four percent of boaters whose primary activity was fishing responded running rapids was not, slightly, or moderately important ( $\chi^2 = 141.06$ ,  $p < .001$ ,  $\phi = .701$ ). Ninety-two percent of Segment 2 boaters ( $\chi^2 = 47.46$ ,  $p < .001$ ,  $\phi = .464$ ) and 85% of renters ( $\chi^2 = 29.87$ ,  $p < .001$ ,  $\phi = .325$ ) responded running rapids was very, or extremely important.

The importance of trout and steelhead fishing was also examined. Sixty-three percent of Segment 2 boaters responded the quality of trout fishing was not, or slightly important ( $\chi^2 = 28.42$ ,  $p < .001$ ,



$\phi = .359$ ). Ninety-one percent of boaters whose primary activity was fishing responded trout fishing was very, or extremely important ( $\chi^2 = 124.46$ ,  $p < .001$ ,  $\phi = .661$ ), while only 19% of renters responded the same way ( $\chi^2 = 25.49$ ,  $p < .001$ ,  $\phi = .301$ ). Seventy percent of Segment 1a boaters responded the quality of trout fishing was extremely important ( $\chi^2 = 25.79$ ,  $p < .001$ ,  $\phi = .342$ ). In regard to steelhead fishing, 46% of boaters whose primary activity was fishing ( $\chi^2 = 64.37$ ,  $p < .001$ ,  $\phi = .479$ ) and 35% of those who boated four or more times ( $\chi^2 = 30.99$ ,  $p < .001$ ,  $\phi = .330$ ) responded the quality of steelhead fishing was extremely important.

Good weather was another reason for boating the Lower Deschutes with strong differences of importance within the sample. Thirty-three percent of those who boated four or more times ( $\chi^2 = 32.93$ ,  $p < .001$ ,  $\phi = .338$ ) responded good weather was not, or slightly important. Sixty-four percent of boaters whose primary activity was fishing responded good weather was slightly, or moderately important ( $\chi^2 = 37.86$ ,  $p < .001$ ,  $\phi = .349$ ). Seventy-three percent of Segment 2 boaters responded good weather was very, or extremely important ( $\chi^2 = 21.68$ ,  $p < .001$ ,  $\phi = .314$ ).

The importance of friends and family, and of peace and solitude, was also analyzed. Only 25% of boaters whose primary activity was fishing ( $\chi^2 = 25.88$ ,  $p < .001$ ,  $\phi = .301$ ) responded getting together with friends and family was very important. Thirty-six percent of Segment 2 boaters responded peace and solitude was not, or slightly important ( $\chi^2 = 23.31$ ,  $p < .001$ ,  $\phi = .325$ ).

### **All User Responses (see Table 3)**

Lower Deschutes boaters varied in their responses concerning how much of the time they were in sight of another boat not in their party. Almost one-third (30%) were in sight of another boat not in their party almost all of the time. Fourteen percent of boaters were in sight of another boat not in their party  $\frac{3}{4}$  of the time. One-fifth (20%) of boaters were in sight of another boat not in their party  $\frac{1}{2}$  of the time. One-quarter (26%) of sample boaters were in sight of another boat not in their party  $\frac{1}{4}$  of the time. The last 10% of boaters were almost never in sight of another boat not in their party.

Three quarters (75%) of Segment 2 boaters responded being in sight of another boat not in their party about  $\frac{3}{4}$  of the time, or almost all of the time ( $\chi^2 = 86.19$ ,  $p < .001$ ,  $\phi = .627$ ). More than two-thirds (67%) of Segment 1+2 boaters responded being in sight of another boat not in their party almost never, or  $\frac{1}{4}$  of the time ( $\chi^2 = 76.99$ ,  $p < .001$ ,  $\phi = .593$ ). Fifty-nine percent of not-at-all to slightly crowded boaters ( $\chi^2 = 55.66$ ,  $p < .001$ ,  $\phi = .441$ ), 60% of boaters whose primary activity was fishing ( $\chi^2 = 28.78$ ,  $p < .001$ ,  $\phi = .318$ ), and 48% of campers ( $\chi^2 = 44.21$ ,  $p < .001$ ,  $\phi = .394$ ) responded being in sight of another boat almost never, or  $\frac{1}{4}$  of the time. However 51% of moderately to extremely crowded boaters responded being in sight of another boat not in their party almost all of the time ( $\chi^2 = 39.65$ ,  $p < .001$ ,  $\phi = .372$ ).

Lower Deschutes boaters also varied in how crowded they felt on the day they were contacted to participate in the survey. The typical 1-9 crowding scale was utilized. Forty-one percent of boaters recorded a 1, 2, or 3, indicating they were not-at-all to slightly crowded. Thirty-four percent of boaters recorded a 4, 5, or 6, indicating they were slightly to moderately crowded. Twenty-five percent of boaters recorded a 7, 8, or 9 indicating they were moderately to extremely crowded. Within the three segments, Segment 2 boaters were most crowded with more than  $\frac{1}{4}$  of

boaters (29%) reporting being moderately to extremely crowded. Segment 1a and 1+2 boaters were more similar in their responses (in both cases the largest number of responses fell in the not-at-all to slightly crowded category), however Segment 1a boaters were slightly more crowded than their Segment 1+2 counterparts.

#### **Camper Responses (see Table 4)**

Of the total 293 respondents, 171 completed some portion of the camping section of the survey. Of those, 136 respondents provided a useful launching and take-out location, which could then be used to derive which segment(s) were boated. More than two-thirds of campers (71%) boated Segment 1+2 ( $\chi^2 = 86.81$ ,  $p < .001$ ,  $\phi = .625$ ). Six percent of camping respondents boated Segment 1a only, and 23% boated Segment 2 only.

One-third (33%) of overnight boaters saw 5-10 groups while boating and camping on the first day of their trip. Almost another third (31%) saw more than 20 groups. The remaining respondents saw 11-20 groups (19%), 1-4 groups (16%), or zero groups (1%). Sixty-five percent of not-at-all to slightly crowded boaters ( $\chi^2 = 19.67$ ,  $p < .001$ ,  $\phi = .365$ ), and 62% of Segment 1+2 boaters ( $\chi^2 = 25.27$ ,  $p < .006$ ,  $\phi = .459$ ), saw 1-4 or 5-10 groups on Day 1. Seventy-eight percent of camping boaters whose primary activity was fishing saw 5-10 or 11-20 groups on Day 1 ( $\chi^2 = 13.84$ ,  $p < .001$ ,  $\phi = .306$ ). More than two thirds (67%) of Segment 2 camping boaters saw more than 20 groups/day ( $\chi^2 = 20.54$ ,  $p < .001$ ,  $\phi = .415$ ).

Lower Deschutes overnight boaters were asked about how the number of groups they saw per day compared with what they expected, and what they preferred. Overall, two thirds (65%) of campers saw about the number of groups they expected. Fourteen percent overall, and 26% of not-at-all to slightly crowded boaters ( $\chi^2 = 30.34$ ,  $p < .001$ ,  $\phi = .426$ ), saw fewer numbers of groups than they expected. Nineteen percent overall, and 43% of moderately to extremely crowded boaters ( $\chi^2 = 19.94$ ,  $p < .001$ ,  $\phi = .346$ ), saw more numbers of groups than expected. Within the segments, the greatest percentage of boaters saw about what they expected. 33% of Segment 2 boaters (and 13% of Segment 1+2 boaters) saw more numbers of groups than they expected, but these findings were not statistically significant.

Overall, almost half (48%) of overnight boaters saw about the number of groups they prefer. Two percent of boaters saw fewer numbers of groups than they prefer, and 36% of boaters saw more numbers of groups than they prefer. Sixty-six percent of not-at-all to slightly crowded overnight boaters saw about the number of groups they prefer ( $\chi^2 = 31.34$ ,  $p < .001$ ,  $\phi = .437$ ), while 71% of moderately to extremely crowded overnight boaters saw more numbers of groups than they prefer ( $\chi^2 = 24.80$ ,  $p < .001$ ,  $\phi = .389$ ). Fifty-seven percent of camping boaters whose primary activity was fishing saw more numbers of groups than they prefer ( $\chi^2 = 16.64$ ,  $p < .001$ ,  $\phi = .319$ ). Within the segments, Segment 1+2 and Segment 2 overnight boaters were nearly identical in their responses, with about half of boaters responding they saw about the number of groups they prefer. Finally, compare the overall percentages between what boaters expected and preferred. Notice the apparent shift from the "About what I Expected" category to the "More than I Prefer" category. This shift indicates some overnight boaters on the Lower Deschutes River are expecting a higher density experience than they prefer.

Boating campers were also asked about the number of groups that camped within sight and sound of their campsite on Day 1. More than half (57%) of overnight boaters camped within sight and sound of 1-4 groups on Day 1. The remaining boaters camped within sight and sound of 0 groups per day (17%), 5-10 groups per day (14%), 11-20 groups per day (1%), or more than 20 groups per day (11%). Eighty-four percent of Segment 1+2 boaters camped within sight and sound of 0-4 groups on Day 1 ( $\chi^2 = 23.15$ ,  $p < .001$ ,  $\phi = .430$ ), while 38% of Segment 2 boaters camped within sight and sound of more than 20 groups on Day 1 ( $\chi^2 = 32.72$ ,  $p < .001$ ,  $\phi = .512$ ). Finally, 63% of boaters age 30 and younger camped within sight and sound of 1-4 groups, and 17% camped within sight and sound of more than 20 groups on Day 1 ( $\chi^2 = 15.92$ ,  $p < .001$ ,  $\phi = .321$ ).

Overall, 61% of boaters camped within sight and sound of about the number of groups they expected. Within the remaining boaters, 16% camped within sight and sound of fewer numbers of groups than they expected, and 22% camped within sight and sound of more numbers of groups than they expected. Within the segments, slightly more overnight Segment 2 boaters reported camping within sight and sound of about the number of groups they expected, although this finding was not statistically significant. Twenty-seven percent of not-at-all to slightly crowded overnight boaters camped within sight and sound of fewer numbers of groups than they expected ( $\chi^2 = 18.80$ ,  $p < .001$ ,  $\phi = .344$ ).

Half (50%) of overnight boaters camped within sight and sound of about the number of groups they prefer. Only 2% camped within sight and sound of fewer numbers of groups than they prefer, while 39% camped within sight and sound of more numbers of groups than they prefer. Sixty-seven percent of not-at-all to slightly crowded overnight boaters camped within sight and sound of about the number of groups they prefer ( $\chi^2 = 23.21$ ,  $p < .001$ ,  $\phi = .384$ ), while 76% of moderately to extremely crowded boaters camped within sight and sound of more numbers of groups than they prefer ( $\chi^2 = 24.51$ ,  $p < .001$ ,  $\phi = .395$ ). Within the segments, more Segment 2 boaters (50%) responded camping within sight and sound of more numbers of groups than they prefer, but this finding was not statistically significant.

Identical to the section above (Table 4, questions 3 and 4), this section (Table 4, questions 6 and 7) indicates an apparent shift from the "About what I Expected" category to the "More than I Prefer" category. This shift indicates some boaters on the Lower Deschutes River are expecting a higher density camping experience than they prefer. Additionally, the expected and preferred percentages between the number of boats seen per day, and number of groups that camped within sight and sound, are roughly equal. This indicates the expectations and preferences of Lower Deschutes Boaters are similar in regard to boating and camping experiences.

Campers were evenly split on the issue of requiring boaters to camp in designated campsites on the Lower Deschutes. Twenty percent strongly favored, 22% moderately favored, 21% moderately opposed, and 26% strongly opposed requiring boaters to camp in designated campsites. Twenty-six percent of boaters age 30 and younger responded they didn't know about their supportiveness concerning designated campsites ( $\chi^2 = 16.95$ ,  $p < .001$ ,  $\phi = .321$ ). Across the segments, no significant differences were observed.

Campers were more strongly opposed to assigning designated campsites to boaters. Almost half (45%) strongly opposed this management action. 18% moderately opposed, 18% moderately

avored, and 7% strongly favored assigning designated campsites to boaters. Forty-seven percent of first-time boaters responded they didn't know about their supportiveness concerning assigning designated campsites ( $\chi^2 = 25.35$ ,  $p < .001$ ,  $\phi = .404$ ). As above, no significant differences were observed across the segments.

Boating campers were also asked about how often they planned to use a campsite with an outhouse, and how often they carried and used an approved portable toilet system. Sixty-one percent of Lower Deschutes campers planned to always use campsites with outhouses. About one-third (34%) of campers carried an approved portable toilet system on their trip. Twenty percent of boaters reported using an approved portable toilet system on their trip. Only 13% of renters reported carrying an approved portable toilet system on their trip ( $\chi^2 = 25.67$ ,  $p < .001$ ,  $\phi = .396$ ).

### **Day User Responses (see Table 5)**

Four out of five (80%) day-use boaters boated Segment 2 ( $\chi^2 = 86.81$ ,  $p < .001$ ,  $\phi = .625$ ). Thirteen percent of day-use boaters boated Segment 1a only, and 7% boated Segment 1+2.

More than half (54%) of day users saw more than 20 groups per day. Nearly a quarter more (23%) saw 11-20 groups per day. Twenty percent of day users saw 5-10 groups per day, and 3% of day users saw 1-4 groups per day. Sixty-seven percent of boaters whose primary activity was fishing saw 1-4 groups per day ( $\chi^2 = 24.37$ ,  $p < .001$ ,  $\phi = .462$ ). Thirty-seven percent of not-at-all to slightly crowded boaters saw 1-4 or 5-10 groups per day ( $\chi^2 = 12.39$ ,  $p < .006$ ,  $\phi = .330$ ), while 83% of moderately to extremely crowded boaters saw more than 20 groups per day ( $\chi^2 = 18.82$ ,  $p < .001$ ,  $\phi = .400$ ). Within the two day-use segments, 55% of Segment 1a boaters saw 5-10 groups per day ( $\chi^2 = 20.43$ ,  $p < .001$ ,  $\phi = .496$ ) and 64% of Segment 2 boaters saw more than 20 groups per day ( $\chi^2 = 23.36$ ,  $p < .001$ ,  $\phi = .531$ ).

Lower Deschutes day users were asked about how the number of groups they saw per day compared with what they expected, and what they preferred. Almost half (48%) of day users encountered about the number of groups they expected. Approximately a quarter more (27%) encountered more groups than they expected. Fifteen percent of day users encountered fewer numbers of groups than they expected. Thirty-nine percent of not-at-all to slightly crowded boaters saw fewer numbers of groups than they expected ( $\chi^2 = 39.25$ ,  $p < .001$ ,  $\phi = .579$ ). Sixty percent of slightly to moderately crowded boaters saw about the number of groups they expected ( $\chi^2 = 13.99$ ,  $p < .001$ ,  $\phi = .346$ ). Fifty-eight percent of moderately to extremely crowded boaters ( $\chi^2 = 29.52$ ,  $p < .001$ ,  $\phi = .502$ ), 56% of first-time boaters ( $\chi^2 = 27.36$ ,  $p < .001$ ,  $\phi = .498$ ), and 42% of boaters on a commercially-guided trip ( $\chi^2 = 19.26$ ,  $p < .001$ ,  $\phi = .415$ ) saw more numbers of groups than they expected. Within the segments, more Segment 2 boaters (23%) saw more numbers of groups than they expected (but this finding was not statistically significant).

More than two-fifths (44%) of day users encountered more numbers of groups than they prefer. An additional two-fifths (39%) of day users encountered about the number of groups they prefer. Five percent of day users encountered fewer numbers of groups than they prefer. Fifty-nine percent of not-at-all to slightly crowded boaters saw about the number of groups they prefer ( $\chi^2 = 32.98$ ,  $p < .001$ ,  $\phi = .531$ ), while 83% of moderately to extremely crowded boaters saw more numbers of groups than they prefer ( $\chi^2 = 32.26$ ,  $p < .001$ ,  $\phi = .525$ ). Forty-nine percent of renters

saw about the number of groups they prefer, and 28% of renters saw more numbers of groups than they prefer ( $\chi^2 = 11.15$ ,  $p < .001$ ,  $\phi = .316$ ). Within the two day-use segments, Segment 2 boaters saw more numbers of groups than they prefer (44%), but this finding was not statistically significant.

### **Management Issues (see Table 6)**

Survey respondents were asked 29 questions about the kinds of problems they might have encountered while boating the Lower Deschutes River. The top seven issues are presented in Table 6, each with more than half of respondents reporting a small, moderate, or serious problem. The biggest problem was a difficulty finding an available campsite due to overcrowding with 63% of respondents reporting this was a small, moderate, or serious problem. Sixty-two percent of respondents reported a lack of campsites was a problem, although 55% of boaters on a commercially-guided trip responded a lack of campsites was not a problem ( $\chi^2 = 17.28$ ,  $p < .002$ ,  $\phi = .327$ ). Sixty-two percent of respondents reported campsites being too close to each other was a problem. Fifty-four percent of respondents reported both too many people floating the river and the number of toilets/outhouses on the river was a problem. Fifty-one percent of respondents reported a lack of campsites with an outhouse was a problem, although 29% of first-time boaters responded they didn't know if a lack of campsites with outhouses was a problem, and 0% responded it was a serious problem ( $\chi^2 = 24.53$ ,  $p < .001$ ,  $\phi = .398$ ). Finally, 51% of respondents reported excessive numbers of unskilled boaters was a problem. Overall these findings indicate boaters experienced their greatest problems with overcrowding, especially related to campsites.

Lower Deschutes boaters were asked about how often they encountered discourteous or inconsiderate behavior from other Lower Deschutes users. Overall, 70% responded they rarely or never encountered discourteous or inconsiderate behavior. Only 30% of boaters responded encountering discourteous or inconsiderate behavior sometimes or often, although 57% of moderately to extremely crowded boaters responded observing discourteous behavior sometimes or often ( $\chi^2 = 42.66$ ,  $p < .001$ ,  $\phi = .386$ ). Within the three segments, Segment 1+2 was slightly more likely to have encountered discourteous or inconsiderate behavior rarely or never, although this finding was not statistically significant.

Lower Deschutes boaters waited an average of 8.8 minutes to launch their boat, however the median wait was only 5.0 minutes. Boaters waited an average of 5.7 minutes at the takeout ramp, however the median wait was only 1.0 minute.

When asked about reserving a launch date under a limited-entry permit system, 68% of boaters responded Internet or phone-in methods were of preference. One-third (33%) preferred a mail-in method. Sixteen percent of boaters preferred reserving their launch date in-person at the office.

Almost half (47%) of boaters responded the overall quality of the Lower Deschutes River was about the same as before. About one-quarter (26%) of boaters responded the overall quality was getting better. Eleven percent of sample responded overall quality was getting worse, while 29% of moderately to extremely crowded boaters responded the overall quality of the river was getting worse ( $\chi^2 = 31.82$ ,  $p < .001$ ,  $\phi = .343$ ). Within the three segments, more Segment 1a boaters responded the overall quality of the river was getting worse (22%), while more Segment 2 boaters

responded the overall quality of the river was getting better (37%) (these findings were not statistically significant).

### **Limiting Use (see Table 7)**

Sample boaters were asked three separate questions concerning limiting use on the Lower Deschutes River. In the first question, more than half of respondents disagreed (28% strongly disagreed, 27% moderately disagreed) with the statement that present use levels need to be reduced. About one-third agreed (27% moderately agreed, 8% strongly agreed) that present use levels need to be reduced. The remaining boaters were uncertain. Sixty-two percent of moderately to extremely crowded boaters moderately or strongly agreed that present use levels need to be reduced ( $\chi^2 = 46.47$ ,  $p < .001$ ,  $\phi = .405$ ). Forty-one percent of not-at-all to slightly crowded boaters strongly disagreed that present use levels need to be reduced ( $\chi^2 = 26.79$ ,  $p < .001$ ,  $\phi = .308$ ).

In the second question, however, a majority of boaters disagreed with the idea of unlimited use. Almost two-thirds of respondents disagreed (26% strongly disagreed, 38% moderately disagreed) with the statement that visitation should be allowed to increase without controls. About one-quarter agreed (20% moderately agreed, 7% strongly agreed) that visitation should be allowed to increase without controls. The remaining 9% were uncertain. Fifty-one percent of moderately to extremely crowded boaters strongly disagreed with allowing visitation to increase without controls ( $\chi^2 = 31.91$ ,  $p < .001$ ,  $\phi = .335$ ).

The third question asked respondents to balance present levels of use against the chance of not getting on the river because of permit system restrictions. An overwhelming majority agreed (53% strongly agree, 30% moderately agreed) with the statement they would prefer to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions. Only 14% disagreed (7% moderately disagreed, 7% strongly disagreed) with the statement. Thirty-seven percent of moderately to extremely crowded boaters moderately or strongly disagreed with preferring to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions ( $\chi^2 = 44.69$ ,  $p < .001$ ,  $\phi = .395$ ).

Within the three river segments, a single trend was observed. Segment 1a boaters appeared slightly more supportive of limiting use than boaters in Segment 1+2 or Segment 2 across the three questions in Table 7. This observation was not statistically significant.

### **Limited-Entry Permit System (see Table 8)**

A limited-entry permit system would restrict boater access by limiting the number of boaters per day on the Lower Deschutes River. Sample boaters were mixed in their support for a limited-entry permit system. In the first of three permit system questions, boaters were asked about their overall support of a permit system. Just over half opposed a permit system (26% strongly opposed, 26% moderately opposed), while two out of five boaters favored (10% strongly favored, 32% moderately favored) a permit system. Sixty-four percent of moderately to extremely crowded boaters moderately or strongly favored a permit system overall ( $\chi^2 = 31.66$ ,  $p < .001$ ,  $\phi = .334$ ).

Exactly half of sample boaters opposed (27% strongly opposed, 23% moderately opposed) a permit system if it resulted in fewer encounters on the river or in camp. At the same time, almost half of boaters favored (8% strongly favored, 37% moderately favored) a permit system if it resulted in fewer encounters on the river or in camp. The remaining 5% didn't know how they felt. Seventy percent of moderately to extremely crowded boaters moderately or strongly favored a permit system if it resulted in fewer encounters on the river or in camp ( $\chi^2 = 44.58$ ,  $p < .001$ ,  $\phi = .398$ ). Forty percent of not-at-all to slightly crowded boaters strongly opposed a permit system if it resulted in fewer encounters on the river or in camp ( $\chi^2 = 26.84$ ,  $p < .001$ ,  $\phi = .308$ ).

More than half of sample boaters favored (19% strongly favored, 37% moderately favored) a permit system if it resulted in less degradation of campsites and the surrounding riparian areas. Almost two out of five sample boaters opposed (22% strongly opposed, 14% moderately opposed) a permit system if it resulted in less degradation of campsites in the surrounding riparian areas. Forty-one percent of moderately to extremely crowded boaters strongly favored a permit system if it resulted in less degradation of campsites and the surrounding riparian areas ( $\chi^2 = 36.50$ ,  $p < .001$ ,  $\phi = .361$ ).

Two general trends were observed within Table 8. First, sample boaters appeared more supportive of a permit system if it resulted in less degradation of campsites and the surrounding riparian areas (opposed to overall, or if it resulted in fewer encounters on the river or in camp). Secondly, Segment 1a boaters were more supportive of a permit system than Segment 1+2 or Segment 2 boaters. Neither of these observations was statistically significant.

## Conclusions

Survey results indicate this sample of Lower Deschutes summer weekend boaters cannot be easily distilled into a single typology. As evidenced by frequency results, and the impressive number of medium and large crosstabulation findings, the population of Lower Deschutes boaters seems to include numerous distinct subgroups, each with their own characteristics (including expectations, preferences, and reactions to present and potential future management actions). The following section is an attempt to capture specific user types and their most defining attributes. It is acknowledged that a certain amount of subjectivity was required in the formulation of these profiles; for a more complete view, readers are encouraged to study the tables and Appendix B.

### **Renters**

Renters boated Segment 2 or Segment 1+2. Running rapids was important for renters, fishing was not. Compared with other boaters, renters determined their launch date far in advance, visited in large groups, and saw about the number of groups they prefer. Renters on overnight trips were less likely to carry approved portable toilets.

### **Boaters on a Commercially-Guided Trip (includes guides)**

Approximately half of boaters on a commercially-guided trip boated Segment 2, the other half were roughly split between Segment 1a and Segment 1+2. Most boaters on a commercially-guided trip had only been boating for a few years. These boaters responded riverside camping was not important, nor was the river being in close proximity to home. Compared with other boaters,

boaters on a commercially-guided trip saw more numbers of groups than they expected, and utilized a drift boat.

### **First-Time Boaters**

Nearly half of first-time boaters visited on a commercially-guided trip. Over half of day users saw more groups of boaters than they expected. First-time boaters expressed relatively undeveloped opinions about river management issues, especially those concerning campsite management. These boaters downplayed the importance of the river being close to home, and reported garbage along the river was not a problem. First-time boaters were relatively supportive of a permit system.

### **Boated Four or More Times**

A majority of visitors who boated four or more times utilized their own boat, and carried an approved portable toilet on overnight floats. Compared with other respondents, these boaters responded the overall quality of the river was improving. Fishing, both trout and steelhead, was important. Relatively speaking, these boaters reported the river being close to home was important, but good weather was not. Visitors who boated four or more times were relatively opposed to the implementation of a permit system.

### **Boated 1989-1991**

Most of the 1989-1991 boaters had been boating for more than 10 years, and were over the age of 40. Half of these boaters used their own boat. Compared to other boaters, those who boated between 1989-1991 were opposed to a permit system, and preferred to deal with present levels of use on the river.

### **30 and Younger**

Three quarters of boaters age 30 and younger had been boating for less than 10 years. More than half rented a boat, and reported a household income of less than \$30,000 a year. Compared with other respondents, these boaters camped within sight and sound of 1-4, or more than 20, groups on Day 1. A majority of these boaters responded the absence of a permit requirement on the Lower Deschutes was not important, and about a quarter remained undecided about designated campsites.

### **50 and Older**

Almost two-thirds of boaters age 50 and older boated Segment 1+2. More than 60% of boaters age 50 and older reported boating for more than 16 years. Compared with other respondents, these boaters responded being in sight of another boat not in their party  $\frac{1}{4}$  of the time, camping within sight and sound of fewer numbers of groups than they prefer, and downplayed the importance of running rapids.

### **1-7-day Planners**

Within the segments, 1-7 day planners were more likely to boat Segment 1a, and less likely to boat Segment 1+2. Half of 1-7 day planners used their own boat, and almost half visited in a group of 1-4.



### **Fishing as Primary Activity**

Two-thirds of boaters whose primary activity was fishing boated Segment 1+2, the other third boated Segment 1a. Most responded trout and steelhead fishing was very important, and almost two-thirds utilized a driftboat. A majority of boaters whose primary activity was fishing used their own boat, and visited in a group of 1-4. Within campers, more than three quarters of respondents saw between 5-20 groups per day, while a majority of day-use boaters saw 1-4 groups per day. Comparatively speaking, running rapids, good weather, and getting together with friends and family was less important. Sixty percent of these boaters were in sight of another boat not in their party almost never, or ¼ of the time, however about the same percentage of campers reported seeing more numbers of groups than they prefer.

### **Segment 1a Boaters**

Most of Segment 1a boaters reported fishing was their primary activity; the quality of trout and steelhead fishing was very important. Comparatively speaking, running rapids, good weather, and getting together with friends and family was less important. Seven out of ten Segment 1a boaters used their own boat, and visited in a group of 1-4; more than 60% of day users saw 5-10 groups per day. More than half of Segment 1a boaters determined their launch date 2-7 days in advance.

### **Segment 1+2 Boaters**

Two-thirds of Segment 1+2 boaters reported being in sight of another boat not in their party almost never, or ¼ or the time. A majority of Segment 1+2 campers saw 1-4 or 5-10 groups on Day 1 (62%), camped within sight and sound of 0-4 groups on Day 1 (83%), and reported 0 groups walked through their campsite on Day 1 (68%). Comparatively speaking, riverside camping, and peace and solitude, was important. More than half of Segment 1+2 boaters determined their launch date 1-6+ months in advance.

### **Segment 2 Boaters**

Two thirds of Segment 2 boaters (day use and overnight) saw more than 20 groups per day, and three quarters of these boaters responded being in sight of another boat not in their party ¾ or all of the time. Compared to the other two segments, Segment 2 boaters camped within sight and sound of more numbers of groups on Day 1, and had more groups walk through their campsite on Day 1. Only 1% of Segment 2 boaters reported fishing was their primary activity; trout and steelhead fishing was not important. Running rapids and good weather was very important, while riverside camping, and peace and solitude, was not important. Segment 2 boaters were more likely to be female and under the age of 40.

### **Not-At-All to Slightly Crowded Boaters**

More than half of not-at-all to slightly crowded boaters boated Segment 1+2. About 2 out of 5 day users saw 1-4 or 5-10 groups of boaters per day, the same percentage saw fewer numbers of groups than they expected. Three out of 10 day users saw about the numbers of groups they prefer. Two-thirds of not-at-all to slightly crowded camping boaters saw 1-4 or 5-10 groups of boaters on Day 1, a quarter saw fewer numbers of groups than they expected. Two thirds of these campers saw about the number of groups they prefer, the same percentage camped within sight and sound of about the number of groups they prefer. Overall, 59% of not-at-all to slightly crowded boaters responded being in sight of another boat not in their party almost never, or ¼ or the time. Across six different questions, not-at-all to slightly crowded boaters were relatively

opposed to a permit system. Eighty-three percent of these boaters observed discourteous behavior rarely or never. Not-at-all to slightly crowded boaters were more likely to respond the overall quality of the river was getting better.

### **Slightly to Moderately Crowded Boaters**

Sixty percent of slightly to moderately boaters saw about the number of groups they expected.

### **Moderately to Extremely Crowded Boaters**

Eighty-three percent of moderately to extremely crowded day-use boaters saw more than 20 groups per day, the same percentage saw more numbers of groups than they prefer. More than half of day users saw more numbers of groups than they expected. Within campers, 4 out of 10 moderately to extremely crowded boaters saw more numbers of groups than they expected, while 7 out of 10 saw more numbers of groups than they prefer. Three quarters of moderately to extremely crowded camping boaters camped within sight and sound of more numbers of groups than they prefer. Overall, about half of moderately to extremely crowded boaters were in sight of another boat not in their party almost all of the time. Across six different questions, moderately to extremely crowded boaters were relatively supportive of a permit system. More than half of these boaters observed discourteous behavior sometimes or often. Moderately to extremely crowded boaters were more likely to respond the overall quality of the river was getting worse.

## **Implications**

### **Density, Crowding, and the Limited-Entry Permit System**

As stated in the Purpose section, a primary requirement of this report was to provide pertinent data concerning the possible implementation of a limited-entry permit system and/or additional non-permit measures. A major issue in the permit system debate has centered around managing social conditions and the need for limiting the number of boaters on the river per day. The essential question asks - Do numbers matter?

The debate over visitor numbers is not new. For decades researchers, agency managers, and recreationists have argued over the importance of visitor densities. The 1993 LDRMP states "Use levels directly affect the type of recreation experience provided" (p. 114). Historically however, this has been difficult to prove. In his 1999 textbook, *Studies in Outdoor Recreation*, Manning concludes "Empirical tests have generally found relatively weak, if any, statistical relationships among use level, perceived crowding, and satisfaction" (p. 119). Manning provides numerous reasons for this finding including the coping behaviors of recreationists, visitor characteristics (including motivations, preferences, expectations, attitudes, and experience), the characteristics of others encountered (including group size, behavior, and perceptions of likeness), the nature and setting of the activity itself, and several methodological issues. This study finds a moderately strong connection between density of use, perceived feelings of crowdedness, and opinions concerning a permit system. Examine the following medium and large crosstabulation results:

Of boaters who reported observing **1-10 groups per day**:

62% of day users reported feeling not-at-all to slightly crowded ( $\chi^2 = 11.15$ ,  $p < .004$ ,  $\phi = .313$ ).

64% of campers reported feeling not-at-all to slightly crowded ( $\chi^2 = 16.86$ ,  $p < .001$ ,  $\phi = .337$ ).

Of boaters who reported being in sight of another boat not in their party **almost never or 1/4 of the time**:

68% reported feeling not-at-all to slightly crowded ( $\chi^2 = 57.07$ ,  $p < .001$ ,  $\phi = .447$ ).

67% opposed the implementation of a permit system ( $\chi^2 = 17.82$ ,  $p < .001$ ,  $\phi = .251$ ).

65% disagreed with the statement that present use levels need to be reduced ( $\chi^2 = 14.75$ ,  $p < .005$ ,  $\phi = .228$ ).

Of boaters who reported observing **more than 20 groups per day**:

48% of day users reported feeling moderately to extremely crowded ( $\chi^2 = 18.33$ ,  $p < .001$ ,  $\phi = .401$ ).

30% of campers reported feeling moderately to extremely crowded ( $\chi^2 = 15.00$ ,  $p < .001$ ,  $\phi = .318$ ).

Of boaters who reported being in sight of another boat not in their party **almost all of the time**:

44% reported feeling moderately to extremely crowded ( $\chi^2 = 26.49$ ,  $p < .001$ ,  $\phi = .304$ ).

56% supported the implementation of a permit system ( $\chi^2 = 16.31$ ,  $p < .003$ ,  $\phi = .240$ ).

These findings underscore the need for management to address the boater density issue, and support the position that the number of boaters on the river per day is important. While the debate continues concerning the appropriateness of a limited-entry permit system on the Lower Deschutes, this study finds the density of use is impacting the social experience on the river. If the managing agencies are to "protect and enhance" the outstandingly remarkable recreation values of the Lower Deschutes River (as specified by the 1968 Wild and Scenic Rivers Act), the issue of managing overall levels of use is a valid concern.

### **Boater Behavior**

While addressing visitor densities, boater behavior must also be discussed. Those who downplay the importance of use levels, often speak of the greater influence of the behavior of nearby recreationists. Manning (1999) finds eight major reasons for the lack of a relationship between use levels and a quality recreation experience including "The characteristics of others encountered influence when use level is evaluated as crowding. These characteristics include the size of group, behavior, and perceptions of likeness" (p. 119). This study finds 83% of not-at-all to slightly crowded boaters observed discourteous behavior rarely or never ( $\chi^2 = 17.78$ ,  $p < .001$ ,  $\phi = .240$ ), while 57% of moderately to extremely crowded boaters observed discourteous behavior sometimes or often ( $\chi^2 = 42.66$ ,  $p < .001$ ,  $\phi = .386$ ). These findings point to the importance of enforcing group size limits, fire bans, and boating-under-the-influence laws, addressing human waste and designated campsite issues, and a continued education of boaters, especially in the areas of boating ethics and Leave-No-Trace practices.

### **Campsite Availability**

Survey respondents were asked 29 questions concerning the kinds of problems they might have encountered on the river, 7 of those yielded responses in which a majority of boaters experienced a small, moderate, or serious problem (see Table 6). Difficulty finding an available campsite due to overcrowding, a lack of campsites, and a lack of campsites with an outhouse, were three kinds of problems most likely to be encountered by Lower Deschutes boaters. Campsites too close to each other, and the number of toilets/outhouses on the river, were also leading issues. While a limited-entry permit system and/or the development of additional campsites (with or without outhouses) are two possible management responses; they are both time-consuming and costly. In the interim,

implementation of non-permit measures including designating campsites and requiring approved portable toilet systems for overnight floats would be helpful in addressing these issues.

### **Problems with Site-Specific Boater Surveys**

A final observation should be made concerning displacement and this site-specific boater survey. Displacement occurs when visitation levels increase, and crowding-sensitive visitors become dissatisfied, changing the place, the activity, or the time in which they would normally recreate. Circumstantial evidence indicates some boaters have already been displaced from the Lower Deschutes River during the peak use season (i.e. conversations with Lower Deschutes boaters visiting during off-peak use periods, and John Day boaters who no longer boat the Deschutes). The trouble lies in the inability of the site-specific survey to identify and account for this displacement. A real danger exists that crowding-sensitive boaters will continually be displaced from the Lower Deschutes River without a corresponding increase in the number of survey respondents reporting a crowded experience. While readers of this report have been cautioned that the scope of this survey has been limited to summer weekend boaters in Segments 1 and 2 only, the issue remains understated.

Certainly a survey of all boaters (including off-peak boaters), on all segments (Segments 1-4), would be preferable. However, even the most comprehensive site-specific survey would still fail to reach those boaters no longer returning to the resource. It must be acknowledged that in areas of high-intensity use some portion of users will be displaced, yet the site-specific survey will be unable to capture these changes. Regional or national surveys could begin to address this issue, however such surveys are beyond the capability of most single units of resource management agencies.

**TABLE 1: Boater Characteristics**

**1. Which segment(s) did you boat? (n=214)**

9% Segment 1a only  
 44% Segment 1+2  
 47% Segment 2 only

**2. Whose boat did you use on the Deschutes?**

	% Overall (n=285)	% Seg. 1a (n=20)	% Seg. 1+2 (n=103)	% Seg. 2 (n=94)
Used own boat, family boat, friend's boat <sup>a,b</sup>	44	70	51	36
Rented a boat	41	0	44	49
Used a boat on a commercially-guided trip <sup>c</sup>	15	30	5	15

a. 65% of those who boated four or more times used their own boat.

b. 53% of boaters whose primary activity was fishing used their own boat.

c. 43% of first-time boaters used a boat on a commercially-guided trip.

**3. How would you describe yourself or your group?**

	% Overall (n=289)	% Seg. 1a (n=19)	% Seg. 1+2 (n=104)	% Seg. 2 (n=98)
Non-commercial, family and friends	77	58	87	78
Passenger on a commercially-guided trip	11	26	4*	9
Organized Group: Scouts, church, school, park and recreation	8	0	4*	11
Commercial guide or outfitter	3	5*	5	2*
Solo, self only	1*	11*	0	0

**4. How many people were in your group?**

	Overall (n=273)	Seg. 1a (n=17)	Seg. 1+2 (n=98)	Seg. 2 (n=95)
Average people <sup>d,e,f</sup>	9.7	3.3	9.3	11.3
Median people	8.0	2.0	7.0	8.0
Maximum people	110	8	50	41

d. 70% of Segment 1a boaters visited in a group of 1-4.

e. 53% of boaters whose primary activity was fishing visited in a group of 1-4.

f. 34% of renters visited in a group of 9-16, 14% visited in a group of 17-24.

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\* Cells with count less than 5.

**TABLE 1: Boater Characteristics continued**

**5. On the day you were contacted to participate in the survey, was fishing your primary activity on the Deschutes River?**

	% Overall (n=289)	% Seg. 1a (n=20)	% Seg. 1+2 (n=102)	% Seg. 2 (n=98)
Yes <sup>h</sup>	21	85	32	1 *
No <sup>i</sup>	79	15	68	99

h. 85% of Segment 1a boaters responded fishing was their primary activity.

i. 1% of Segment 2 boaters responded fishing was their primary activity.

**6. Approximately how many times have you boated the Deschutes in the past 12 months?**

	Overall (n=292)	Seg. 1a (n=20)	Seg. 1+2 (n=104)	Seg. 2 (n=98)
Average times	5.0	8.3	6.3	3.9
Median times	2.0	3.0	2.0	2.0
Maximum times	85	85	85	50

**7. List other rivers you have boated in the last 12 months. (n=135)**

9% Rogue  
9% McKenzie  
8% Clackamas  
5% Sandy  
5% Santiam

**8. Counting this year, how many years have you been boating rivers?**

	Overall (n=289)	Seg. 1a (n=20)	Seg. 1+2 (n=103)	Seg. 2 (n=97)
Average years	12.3	12.7	15.6	11.5
Median years	10.0	11.5	13.0	10.0
Maximum years	45	32	45	30

**9. How far in advance did you determine your launch date?**

	% Overall (n=288)	% Seg. 1a (n=19)	% Seg. 1+2 (n=104)	% Seg. 2 (n=96)
Less than 1 day	2	0	0	1 *
From 2 to 7 days	19	53	11	19
From 8 to 30 days	33	26	32	39
From 1 to 3 months	29	21	33	28
From 3 to 6 months <sup>j</sup>	10	0	16	4 *
Over 6 months <sup>j</sup>	7	0	8	9

j. 28% of renters determined their launch date 3 or more months in advance.

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\* Cells with count less than 5.

**TABLE 2: Boater Preferences**

**1. People have a variety of reasons why they boat the Deschutes. Please indicate how important each of the following is to you personally:**

	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Running Rapids (n=290) <sup>a,b,c,d</sup>	9%	6%	16%	35%	34%
Quality of trout fishing (n=288) <sup>e,f,g,h</sup>	40%	11%	13%	14%	22%
Quality of steelhead or salmon fishing (n=284) <sup>i,j</sup>	44%	11%	16%	12%	17%
Good weather (n=289) <sup>k,l,m</sup>	7%	9%	26%	40%	18%
Getting together with friends and family (n=288) <sup>n</sup>	1%	3%	11%	39%	46%
Peace and Solitude (n=290) <sup>o</sup>	11%	12%	28%	29%	20%
Couldn't get a permit on another river (n=271)	80%	8%	7%	3%	2%
No river permit required (n=268)	41%	8%	19%	14%	18%

- a. 75% of Segment 1a boaters responded running rapids was not, or slightly important.
- b. 84% of boaters whose primary activity was fishing responded running rapids was not, slightly, or moderately important.
- c. 92% of Segment 2 boaters responded running rapids was very, or extremely important.
- d. 85% of renters responded running rapids was very, or extremely important.
- e. 63% of Segment 2 boaters responded the quality of trout fishing was not, or slightly important.
- f. 91% of boaters whose primary activity was fishing responded the quality of trout fishing was very, or extremely important.
- g. 19% of renters responded the quality of trout fishing was very, or extremely important.
- h. 70% of Segment 1a boaters responded the quality of trout fishing was extremely important.
- i. 46% of boaters whose primary activity was fishing responded the quality of steelhead fishing was extremely important.
- j. 35% of those who boated four or more times responded the quality of steelhead fishing was extremely important.
- k. 33% of those who boated four or more times responded good weather was not, or slightly important.
- l. 64% of boaters whose primary activity was fishing responded good weather was slightly, or moderately important.
- m. 73% of Segment 2 boaters responded good weather was very, or extremely important.
- n. 25% of boaters whose primary activity was fishing responded getting together with friends and family was very important.
- o. 36% of Segment 2 boaters responded peace and solitude was not, or slightly important.

**TABLE 3: All User Responses**

**1. About how much of the time were you in sight of another boat, not in your party? (n=289)**

	% Overall (n=289)	% Seg. 1a (n=19)	% Seg. 1+2 (n=103)	% Seg. 2 (n=97)
Almost never <sup>a,b,c,d</sup>	10	21*	18	3*
About 1/4 of the time <sup>a,b,c,d</sup>	26	21*	49	6
About 1/2 of the time	20	26	19	16
About 3/4 of the time <sup>e</sup>	14	21*	7	23
Almost all of the time <sup>e,f</sup>	30	11*	7	52

- a. 59% of not-at-all to slightly crowded boaters responded being in sight of another boat not in their party almost never, or 1/4 of the time.  
b. 60% of boaters whose primary activity was fishing responded being in sight of another boat almost never, or 1/4 of the time.  
c. 48% of campers responded being in sight of another boat not in their party almost never, or 1/4 of the time.  
d. 67% of Segment 1+2 boaters responded being in sight of another boat not in their party almost never, or 1/4 of the time.  
e. 75% of Segment 2 boaters responded being in sight of another boat not in their party 3/4, or almost all of the time.  
f. 51% of moderately to extremely crowded boaters responded being in sight of another boat not in their party almost all of the time.

**2. Do you think the section(s) you boated when you were contacted about participating in the survey was(were) crowded? (circle one number).**

	not at all crowded		slightly crowded			moderately crowded		extremely crowded	
Overall	1	2	3	4	5	6	7	8	9
	12%	12%	17%	13%	8%	13%	12%	7%	6%

	% Overall (n=289)	% Seg. 1a (n=19)	% Seg. 1+2 (n=101)	% Seg. 2 (n=98)
% Not-at-all to slightly crowded	41	47	54	31
% Slightly to moderately crowded	34	37	29	40
% Moderately to extremely crowded	25	16	17	29

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\* Cells with count less than 5.



**TABLE 4: Camper Responses**

**1. Which segment(s) did you boat? (n=138)**

- 6% Segment 1a only <sup>♦</sup>  
71% Segment 1+2 <sup>a</sup>  
23% Segment 2 only

a. 71% of campers boated Segment 1+2.

**2. Number of groups you saw on Day 1?**

	% Overall (n=151)	% Seg. 1+2 (n=92)	% Seg. 2 (n=24)
0 groups/day	1	1*	0
1-4 groups/day <sup>b,c</sup>	16	22	4*
5-10 groups/day <sup>b,c,d</sup>	33	40	17*
11-20 groups/day <sup>d</sup>	19	20	12*
More than 20 groups/day <sup>e</sup>	31	17	67

b. 65% of not-at-all to slightly crowded boaters saw 1-4 or 5-10 groups on Day 1.

c. 62% of Segment 1+2 boaters saw 1-4 or 5-10 groups on Day 1.

d. 78% of boaters whose primary activity was fishing saw 5-10 or 11-20 groups on Day 1.

e. 67% of Segment 2 boaters saw more than 20 groups on Day 1.

**3. How did the number of groups you saw compare with what you EXPECTED?**

	% Overall (n=171)	% Seg. 1+2 (n=98)	% Seg. 2 (n=31)
Fewer than I Expected <sup>f</sup>	14	19	3*
About what I Expected	65	67	61
More than I Expected <sup>g</sup>	19	13	33
Had no Expectation	2	1*	3*

f. 26% of not-at-all to slightly crowded boaters saw fewer numbers of groups than they expected.

g. 43% of moderately to extremely crowded boaters saw more numbers of groups than expected.

**4. How did the number of groups you saw compare with what you PREFER?**

	% Overall (n=168)	% Seg. 1+2 (n=98)	% Seg. 2 (n=29)
Fewer than I Prefer	2	3*	0
About what I Prefer <sup>h</sup>	48	49	52
More than I Prefer <sup>i,j</sup>	36	34	31
Had no Preference	14	14	17

h. 66% of not-at-all to slightly crowded boaters saw about the number of groups they prefer.

i. 71% of moderately to extremely crowded boaters saw more numbers of groups than they prefer.

j. 57% of boaters whose primary activity was fishing saw more numbers of groups than they prefer.

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<sup>♦</sup> Segment 1a boaters are not presented separately in Table 4 because of a limited number of responses.

\* Cells with count less than 5.

**TABLE 4: Camper Responses continued**

**5. Number of groups that camped within sight and sound of your campsite on Day 1?**

	% Overall (n=155)	% Seg. 1+2 (n=95)	% Seg. 2 (n=24)
0 groups/day <sup>k</sup>	17	22	4*
1-4 groups/day <sup>k,l</sup>	57	62	46
5-10 groups/day	14	12	12*
11-20 groups/day	1	2*	0
More than 20 groups/day <sup>l,m</sup>	11	2*	38

k. 84% of Segment 1+2 boaters camped within sight and sound of 0-4 groups on Day 1.

l. Boaters age 30 and younger camped within sight and sound of 1-4 groups (63%), or more than 20 groups (17%) on Day 1.

m. 38% of Segment 2 boaters camped within sight and sound of more than 20 groups on Day 1.

**6. How did the number of groups that camped within sight & sound of your campsite compare with what you EXPECTED?**

	% Overall (n=162)	% Seg. 1+2 (n=97)	% Seg. 2 (n=26)
Fewer than I Expected <sup>n</sup>	16	20	8*
About what I Expected	61	59	69
More than I Expected	22	21	19
Had no Expectation	1	0	4*

n. 27% of not-at-all to slightly crowded boaters camped within sight and sound of fewer numbers of groups than they expected.

**7. How did the number of groups that camped within sight & sound of your campsite compare with what you PREFER?**

	% Overall (n=161)	% Seg. 1+2 (n=96)	% Seg. 2 (n=26)
Fewer than I Prefer	2	3*	0
About what I Prefer <sup>o</sup>	50	57	39
More than I Prefer <sup>p</sup>	39	32	50
Had no Preference	9	8	11*

o. 67% of not-at-all to slightly crowded boaters camped within sight and sound of about the number of groups they prefer.

p. 76% of moderately to extremely crowded boaters camped within sight and sound of more numbers of groups than they prefer.

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\* Cells with count less than 5.

**TABLE 4: Camper Responses continued**

**8. To reduce competition for campsites, and provide privacy in campsites, how supportive are you of requiring boaters camp only in designated campsites? (n=165)**

20% Strongly Favor  
22% Moderately Favor  
21% Moderately Oppose  
26% Strongly Oppose  
11% Don't Know<sup>q</sup>

q. 26% of boaters age 30 and younger responded they didn't know about designated campsites.

**9. To reduce competition for campsites, and provide privacy in campsites, how supportive are you of assigning designated campsites to boaters? (n=165)**

7% Strongly Favor  
18% Moderately Favor  
18% Moderately Oppose  
45% Strongly Oppose  
12% Don't Know<sup>r</sup>

r. 47% of first-time boaters responded they didn't know about assigning designated campsites.

**10. Do you plan to always use campsites with outhouses? (n=167)**

61% Yes  
39% No

**11. Did you carry an approved portable toilet system on this trip? (n=167)**

34% Yes<sup>s</sup>  
66% No

s. 13% of renters reported carrying an approved portable toilet system on their trip.

**12. Did you use an approved portable toilet system on this trip? (n=166)**

20% Yes  
80% No

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\* Cells with count less than 5.

**TABLE 5: Day User Responses**

**1. Which segment(s) did you boat? (n=84)**

- 13% Segment 1a only
- 7% Segment 1+2 <sup>◊</sup>
- 80% Segment 2 only <sup>a</sup>

a. 80% of day users boated Segment 2.

**2. Number of groups you saw during your day on the Deschutes River?**

	% Overall (n=114)	% Seg. 1a (n=11)	% Seg. 2 (n=66)
0 groups/day	0	0	0
1-4 groups/day <sup>b,c</sup>	3	18*	1*
5-10 groups/day <sup>c,d</sup>	20	55	11
11-20 groups/day	23	18	24
More than 20 groups/day <sup>e,f</sup>	54	9*	64

- b. 67% of boaters whose primary activity was fishing saw 1-4 groups per day.
- c. 37% of not-at-all to slightly crowded boaters saw 1-4 or 5-10 groups per day.
- d. 55% of Segment 1a boaters saw 5-10 groups per day.
- e. 64% of Segment 2 boaters saw more than 20 groups per day.
- f. 83% of moderately to extremely crowded boaters saw more than 20 groups per day.

**3. How did the number of groups you encountered compare with what you EXPECTED to see?**

	% Overall (n=117)	% Seg. 1a (n=12)	% Seg. 2 (n=66)
Fewer than I expected <sup>g</sup>	15	34*	17
About what I expected <sup>h</sup>	48	50	53
More than I expected <sup>i,j,k</sup>	27	8*	23
Had no expectation	10	8*	7

- g. 39% of not-at-all to slightly crowded boaters saw fewer numbers of groups than they expected.
- h. 60% of slightly to moderately crowded boaters saw about the number of groups they expected.
- i. 58% of moderately to extremely crowded boaters saw more numbers of groups than they expected.
- j. 56% of first-time boaters saw more numbers of groups than they expected.
- k. 42% of boaters on a commercially-guided trip saw more numbers of groups than they expected.

**4. How did the number of groups you encountered compare with what you PREFER to see?**

	% Overall (n=117)	% Seg. 1a (n=12)	% Seg. 2 (n=66)
Fewer than I prefer	5	0	9
About what I prefer <sup>l,m</sup>	39	50	36
More than I prefer <sup>m,n</sup>	44	25*	44
Had no preference	12	25*	11

- l. 59% of not-at-all to slightly crowded boaters saw about the number of groups they prefer.
- m. 49% of renters saw about the number of groups they prefer, 28% saw more numbers of groups than they prefer.
- n. 83% of moderately to extremely crowded boaters saw more numbers of groups than they prefer.

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<sup>◊</sup> Segment 1+2 boaters are not presented separately in Table 5 because of a limited number of responses.

\* Cells with count less than 5.

**TABLE 6: Management Issues**

- 1. Understanding the kinds of problems you may have encountered while boating the Deschutes River will help us manage the river now, and in the future. To what extent did you find each of the following to be a problem during your trip?**

	Not a Problem	A Small Problem	A Moderate Problem	A Serious Problem	Don't Know
Difficulty finding an available campsite due to overcrowding (n=165)	36%	26%	19%	18%	1%
Lack of campsites <sup>a</sup> (n=165)	37%	25%	26%	11%	1%
Campsites are too close to each other (n=165)	38%	41%	16%	5%	0%
Number of toilets/outhouses on the river (n=165)	45%	26%	18%	10%	1%
Too many people floating the river (n=292)	46%	23%	19%	12%	0%
Lack of campsites with an outhouse <sup>b</sup> (n=164)	44%	17%	23%	11%	5%
Excessive number of unskilled boaters (n=290)	47%	28%	15%	8%	2%

a. 55% of boaters on a commercially-guided trip responded a lack of campsites was not a problem.

b. 29% of first-time boaters responded they didn't know if a lack of campsites with outhouses was a problem, 0% responded it was a serious problem.

- 2. How often did you encounter discourteous or inconsiderate behavior from other Deschutes users?**

	% Overall (n=291)	% Seg. 1a (n=20)	% Seg. 1+2 (n=102)	% Seg. 2 (n=97)
Rarely or never	70	70	77	69
Sometimes (once or twice a day) <sup>c</sup>	27	30	22	25
Often (more than twice a day) <sup>c</sup>	3	0	1*	6

c. 57% of moderately to extremely crowded boaters responded observing discourteous behavior sometimes or often.

- 3. How long did you have to wait for people to get out of the way before you could use the launch area at the put-ins and take-outs?**

Average 8.8 minutes at the put-in. (n=281)

Minimum	25%	50%	75%	Maximum
0.0 min.	0.0 min.	5.0 min.	10.0 min.	120 min.

Average 5.7 minutes at the take-out. (n=257)

Minimum	25%	50%	75%	Maximum
0.0 min.	0.0 min.	1.0 min.	10.0 min.	60 min.

- 4. If a permit system was implemented, what method(s) would you prefer to reserve your launch date? (choose any combination). (n=293)**

68% Internet

68% Phone-in

33% Mail-in

16% In person at office

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\* Cells with count less than 5.

**TABLE 6: Management Issues Continued**

**5. If you visited the Deschutes river before, would you say overall quality of the area is:**

	% Overall (n=275)	% Seg. 1a (n=18)	% Seg. 1+2 (n=100)	% Seg. 2 (n=93)
Getting better?	26	22*	25	37
About the same?	47	39	55	43
Getting worse? <sup>d</sup>	11	22*	12	8
First trip?	16	17*	8	12

d. 29% of moderately to extremely crowded boaters responded the overall quality of the river was getting worse.

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\* Cells with count less than 5.

**TABLE 7: Limiting Use**

- 1. A permit system is one of the options to control use on the Deschutes River. The permit system would restrict boater access by limiting the number of boaters per day on the river. Please check how you feel about each of the following statements and questions.**

	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree	Don't Know
Present use levels need to be reduced. <sup>a,b</sup> (n=287)	8%	27%	27%	28%	10%
Visitation should be allowed to increase without controls. <sup>c</sup> (n=288)	7%	20%	38%	26%	9%
I would prefer to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions. <sup>d</sup> (n=290)	53%	30%	7%	7%	3%

- a. 62% of moderately to extremely crowded boaters moderately or strongly agreed present use levels need to be reduced.  
b. 41% of not-at-all to slightly crowded boaters strongly disagreed present use levels need to be reduced.  
c. 51% of moderately to extremely crowded boaters strongly disagreed visitation should be allowed to increase without controls.  
d. 37% of moderately to extremely crowded boaters moderately or strongly disagreed with preferring to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions.

	% Overall (n=287)		% Seg. 1a (n=20)		% Seg. 1+2 (n=101)		% Seg. 2 (n=96)	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
Present use levels need to be reduced.	35	55	40	45	32	62	37	55

	(n=288)		(n=20)		(n=102)		(n=96)	
Visitation should be allowed to increase without controls.	27	64	25	60	30	65	34	59

	(n=290)		(n=20)		(n=102)		(n=98)	
I would prefer to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions.	83	14	80	10	86	13	82	15

**TABLE 8: Limited-Entry Permit System**

- 1. A permit system is one of the options to control use on the Deschutes River. The permit system would restrict boater access by limiting the number of boaters per day on the river. Please check how you feel about each of the following statements and questions.**

	Strongly Favor	Moderately Favor	Moderately Oppose	Strongly Oppose	Don't Know
Overall, would you support a permit system? <sup>a</sup> (n=287)	10%	32%	26%	26%	6%
Would you support a permit system if it resulted in fewer encounters on the river or in camp? <sup>b,c</sup> (n=286)	8%	37%	23%	27%	5%
Would you support a permit system if it resulted in less degradation of campsites and the surrounding riparian areas? <sup>d</sup> (n=284)	19%	37%	14%	22%	8%

- a. 64% of moderately to extremely crowded boaters moderately or strongly favored a permit system overall.  
b. 70% of moderately to extremely crowded boaters moderately or strongly favored a permit system if it resulted in fewer encounters on the river or in camp.  
c. 40% of not-at-all to slightly crowded boaters strongly opposed a permit system if it resulted in fewer encounters on the river or in camp.  
d. 41% of moderately to extremely crowded boaters strongly favored a permit system if it resulted in less degradation of campsites and the surrounding riparian areas.

	% Overall (n=287)		% Seg. 1a (n=20)		% Seg. 1+2 (n=102)		% Seg. 2 (n=96)	
	Favor	Oppose	Favor	Oppose	Favor	Oppose	Favor	Oppose
Overall, would you support a permit system?	42	52	45	45	34	61	42	54

	(n=286)		(n=20)		(n=101)		(n=97)	
Would you support a permit system if it resulted in fewer encounters on the river or in camp?	45	50	55	40	41	55	42	53

	(n=284)		(n=19)		(n=102)		(n=95)	
Would you support a permit system if it resulted in less degradation of campsites and the surrounding riparian areas?	56	36	74	21	49	43	60	34



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## APPENDIX A: ADDITIONAL METHODOLOGIES

### **Survey Administration**

Bureau of Land Management River Rangers, along with other BLM staff, and one local county deputy sheriff, contacted boaters at launching and take-out ramps throughout Segments 1 and 2. The primary contact points were Warm Springs and Trout Creek in Segment 1, and Harpham Flat in Segment 2. Additional possible contact points included Long Bend, Wapanita, Maupin City Park, Sandy Beach, and numerous other points along this 57-mile stretch of river. In every case, river staff were required to balance survey responsibilities with other job duties including boater education, fee compliance, traffic control, emergency services, and more. At times these other duties took precedence, and staff were instructed to return to the methodology in a systematic fashion. For example, staff at Harpham Flat were instructed to contact every fourth group. If a ranger was supposed to request a study participant from the next group they contacted, but was diverted because of a medical incident; upon returning to surveying the employee would ask for a volunteer from the first group they subsequently contacted.

Participants were systematically selected utilizing a two-step process. Initially, groups of boaters were selected; subsequently a single individual within the selected group was asked to participate. Group selection differed between the two segments, with the objective of contacting roughly equal numbers of Segment 1 and Segment 2 boaters. In Segment 1, each group was contacted, and 25% of the group was asked to participate. So, with a group size of 1-6, one boater was asked to participate, with a group size of 7-10, two boaters were asked to participate, with a group size of 11-14, three boaters were asked to participate, and with a group size of 15 or more (16 is the group size limit on Segment 1), four boaters were asked to participate. In Segment 2, every fourth group was contacted, and only one boater per group was asked to participate.

With a group and number of participants established, boating individuals were randomly selected to address the issue of differences between trip leaders and other members of the boating party. This process focused on the survey date, and the birthdates of the individuals within the boating party. The boater whose birthdate was closest to the survey date was asked to participate in the study. If that person was unwilling to participate, the person with the second closest birthdate to the survey date was asked to participate, and so on. Commercial guides could participate in the study; however they could only participate once, and only if their birthdate was closest to the survey date. Additionally, boaters were required to be 18 years of age to participate in the study. With the selection of a willing participant, surveyors requested a name, address, and telephone number. Participants were told they would be sent a survey in the mail three to four weeks later.

### **Survey Design**

One question from the current survey seems to have been poorly constructed. Question 2c in the Management Issues section asked about how strongly participants agreed or disagreed with the following statement "I would prefer to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions." While this is exactly what management wanted to know, it is the use of the words "deal" and "face" that seem ill-conceived. In retrospect the question seems biased in favor of agreeing with the statement.

The response rate is that portion of the sample returning a completed survey, compared with those boaters failing to return a survey. Two tools were used to improve the response rate. First, surveys were stamped with a "RECEIVE A FREE RIVER PRIZE, Mail your survey by..." message to encourage the return of a completed survey. Study participants later received a Lower Deschutes Boater Guide, and an abbreviated version of the study results. Secondly, two rounds of follow-up postcards were mailed to study participants who failed to return their surveys. The postcard asked participants to return their survey, and thanked them for their participation. In both rounds of mailings the supply of postcards ran short; approximately 100 boaters who should have received a postcard, did not receive a postcard.

### **Data Analysis**

In a strict statistical sense, crosstabulation analysis (crosstabs) should be run "apriori", meaning explicit hypotheses concerning statistical outcomes be developed before the analysis is completed. Instead, many of the crosstabs presented in this report were done in a "a posteriori" (post-hoc) fashion in which a pre-analysis hypothesis was not completed. The danger with "post-hoc" crosstab analyses is an increased chance of a Type 1 error, where the analysis indicates there are statistically significant differences within the sample that do not truly exist. The risk of a Type 1 error must always be balanced against the risk of a Type 2 error, where the analysis fails to indicate statistically significant differences that really do exist. Because of the utilization of the post-hoc approach, the primary researcher focused on reducing the chance of the Type 1 error, and did so in two primary ways. First, each statistically significant crosstab was examined for its reasonableness - did the finding make sense? Secondly, the utilization of the chi-square ( $\chi^2$ ) test of statistical significance was modified. A strict significance level of  $p < .01$  was utilized, reducing the chance of a Type 1 error.

The use of the Cramers-V statistic was also modified. Cohen (1988) provides suggested small, medium, and large effect cutoffs for statistics of this type. The small effect statistic cutoff was raised from .1 to .2, and only large effects were discussed in the Results section (Appendix B includes small, medium, and large effect crosstabs). Cohen's cutoff for medium effects (.3) was not modified.

Because of a limited number of responses, Segment 1a campers and Segment 1+2 day users were not further broken out in their respective tables.

In an effort to maximize subset sample sizes, campers and day users were defined by whether or not they completed the camping section of the survey. Where respondents completed both sections, boaters were assumed to have camped overnight.

### **Limitations**

One methodological objective was to obtain six study participants each Saturday and Sunday at the Long Bend boat launch - this was not achieved. The reason for this objective was to ensure a representative number of boaters on a commercially-guided trip would be included in the study sample. Unfortunately, the hours in which Long Bend is most utilized by commercial operators is also the time of peak use at the primary Segment 2 launching ramp - Harpham Flat - and the ranger staff was often not available to visit Long Bend at these times. Within the sample, only

15% of Segment 2 boaters identified themselves as utilizing a boat on a commercially-guided trip (see Table 1, Question 2), this may be below the actual amount of commercially-guided use in Segment 2. No accurate figures (from the Boater Pass system) were available to check the validity of this assertion.

Twenty-three percent, or 32 of the 138 campers within the sample reported boating Segment 2 and completed the overnight boating section of the survey (Segment 2 is a 14-mile stretch of river usually completed in a single day). It is possible these respondents boated halfway down Segment 2 and camped (probably at a road-accessible campground), continuing down to the end of Segment 2 (Sandy Beach) on the second day, but it is unlikely. More likely respondents camped in a Segment 2 road-accessible campground on Friday and/or Saturday and completed day trips on Segment 2 on Saturday and/or Sunday. This is not what is normally envisioned when one thinks about an overnight boating experience.

## Renters vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Do you carry a portable toilet?	.396	25.67	.001	13% of renters reported carrying a toilet, but 51% of other users reported they carried an approved portable toilet (Use of toilet not significant).
Number of people in your group?	.330	31.00	.001	34% of renters visited in a group of 9-16 (vs 17%), 14% visited in a group of 17-24 (vs 5%), but only 11% visited in a group of 1-4 (vs 36%).
Running rapids	.325	29.87	.001	85% of renters responded running rapids was very or extremely important (vs 58%).
Within non-campers, encounters vs. what you prefer to see?	.316	11.15	.01	49% of renters saw about the number of groups they prefer (vs 32%), and 28% saw more numbers of groups than they prefer (vs 54%).
When did you plan your launch?	.309	26.96	.001	28% of renters determined their launch date 3-6+ months in advance (vs 10%), 10% determined their launch date 1-7 days in advance (vs 28%).
Quality of trout fishing	.301	25.49	.001	49% of renters responded the quality of trout fishing was not important (34%).
Was fishing your primary activity?	.299	25.24	.001	7% of renters responded fishing was their primary activity (vs 32%).
Which segments were boated?	.275	16.47	.001	Renters – Seg. 1a (0%), Seg. 2 (51%), Seg. 1+2 (49%). Others – Seg. 1a (16%), Seg. 2 (38%), Seg. 1+2 (46%).
Quality of steelhead fishing	.260	18.68	.001	54% of renters responded the quality of steelhead fishing was not important (vs 37%).
Age	.204	11.67	.009	37% of renters were 30 and under (vs 21%).
Getting together with friends and family	.198	10.99	.001	57% of renters responded getting together with friends and family was extremely important (vs 40%).

## Commercially-guided trip vs. Not (includes guides)

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Within non-campers, encounters vs. what you expected to see?	.415	19.26	.001	42% of boaters on a commercially-guided trip saw more numbers of groups than they expected (vs 21%).
Lack of campsites	.327	17.28	.002	55% of boaters on a commercially-guided trip responded a lack of campsites was not a problem (37%).
Boated between 1997-1995	.286	23.25	.001	73% of boaters on a commercially-guided trip boated 0 times between 1997-1995 (vs 35%).
Camper or day user?	.279	22.11	.001	73% of boaters on a commercially-guided trip were day users (35%).
Parking at put-in and take-out points	.273	21.18	.001	65% of boaters on a commercially-guided trip responded a shortage of parking at put-ins and take-outs was not a problem (vs 54%).
Utilize a driftboat?	.253	17.99	.001	37% of boaters on a commercially-guided trip utilized a driftboat (vs 12%).
Are you a guide?	.249	17.56	.001	16% of boaters on a commercially-guided trip were guides (vs 2%).
Close to home	.248	17.04	.002	52% of boaters on a commercially-guided trip responded the river being close to home was not important (vs 24%).
Which segments were boated?	.237	12.24	.002	24% of boaters on a commercially-guided trip boated Segment 1a (vs 7%), 56% boated Segment 2 (vs 42%).
Boated between 1994-1992	.234	15.60	.004	80% of boaters on a commercially-guided trip have boated 0 times between 1994-1992 (vs 51%).
Deal with present use rather than face the chance of not...	.231	15.07	.005	34% of boaters on a commercially-guided trip strongly agree with the statement that they would rather deal with present use than face the chance of not getting on the river because of permit system restrictions (vs 56%).
Riverside camping	.222	13.78	.008	29% of boaters on a commercially-guided trip responded riverside camping was not important (vs 11%).
Boated between 1991-1989	.220	13.75	.008	86% of boaters on a commercially-guided trip boated 0 times between 1991-1989 (vs 63%).
No permit required	.219	12.54	.014	56% of boaters on a commercially-guided trip responded the lack of a required boat permit was not important (vs 38%).
Boated between 1985-1983	.215	13.17	.010	98% of boaters on a commercially-guided trip boated 0 times between 1985-1983 (vs 73%).
Utilize an oar raft?	.207	12.08	.001	14% of boaters on a commercially-guided trip utilized an oar raft (vs 42%).
Where did you takeout?	.206	10.15	.001	43% of boaters on a commercially-guided trip used a takeout in Segment 1 (vs 17%), 57% used a takeout in Segment 2 (vs 83%).

## First-time boaters vs. return boaters

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Within non-campers, encounters vs. what you expected to see?	.498	27.36	.001	56% of first-time boaters saw more numbers of groups than they expected (vs 18%).
Assign designated campsites	.404	25.35	.001	47% of first-time boaters responded they didn't know about assigning designated campsites (vs 8%).
Lack of campsites with outhouses	.398	24.53	.001	29% of first-time boaters responded they didn't know if a lack of campsites with outhouses was a problem (2%), and 0% responded it was a serious problem (vs 13%).
Owner of the boat	.383	39.26	.001	43% of first-time boaters used a boat on a commercially-guided trip (vs 9%), 5% used their own boat (vs 38%).
Groups sending someone ahead for a campsite	.345	18.71	.001	0% of first-time boaters responded other groups sending someone ahead to secure a campsite was a moderate or serious problem (vs 33%).
Overall, support a permit system?	.280	21.04	.001	50% of first-time boaters responded they moderately favored a permit system (vs 28%).
Close to home	.273	20.00	.001	55% of first-time boaters responded the river being close to home was not important (vs 23%).
Too much litter and garbage along river	.272	20.29	.001	86% of first-time boaters responded too much litter and garbage along the river was not a problem (vs 49%).
Deal with present use rather than face the chance of not...	.271	20.00	.001	50% of first-time boaters moderately favored dealing with present use rather than face the chance of not... (vs 26%).
Support permit system/encounters?	.270	19.47	.001	62% of first-time boaters moderately favored a permit system (vs 31%) and 7% strongly opposed a permit system (vs 33%).
Use levels should be reduced	.264	18.82	.001	12% of first-time boaters strongly disagreed that present use levels need to be reduced (vs 32%).
Excessive # of unskilled boaters	.252	17.40	.004	62% of first-time boaters responded excessive numbers of unskilled boaters was not a problem (vs 44%).
Too few places to buy boater pass	.246	16.55	.002	9% of first-time boaters responded too few places to buy a boater pass was a small, moderate, or serious problem (vs 28%).
Education	.237	15.13	.010	26% of first-time boaters responded they were a college graduate (vs 44%).
Too many comm.. ops. and/or rentals	.225	13.67	.008	70% of first-time boaters responded too many commercial operators and/or rental boats was not a problem (vs 50%).
Riverside camping	.224	13.58	.009	29% of first-time boaters responded riverside camping was not important (vs 10%).
Number of people in your group?	.218	13.03	.011	23% of first-time boaters visited in a group of 17-24 (vs 7%), 14% visited in a group of 1-4 (vs 27%).
Gender	.190	9.72	.002	47% of first-time boaters were female (vs 24%).

## Boated 4 or more times vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Whose boat did you use?	.457	59.64	.001	65% of those who boated four or more times use their own boat (vs 19%), only 17% rented a boat (vs 51%).
Good weather	.338	32.93	.001	33% of those who boated four or more times responded good weather was not or slightly important (vs 9%).
Quality of steelhead fishing	.330	30.99	.001	35% of those who boated four or more times responded the quality of steelhead fishing was extremely important (vs 10%).
Do you always carry a portable toilet?	.298	14.76	.001	55% of those who boated 4 or more times responded they always carry a portable toilet (vs 24%).
Overall quality	.276	20.88	.001	33% of those who boated 4 or more times responded the overall quality was getting better (vs 23%).
Overall, support a permit system?	.266	20.20	.001	42% of those who boated 4 or more times responded they strongly opposed a permit system (vs 19%).
Quality of trout fishing	.259	19.35	.001	34% of those who boated 4 or more responded the quality of trout fishing was extremely important (vs 17%).
Number of people in your group?	.239	16.75	.002	35% of those who boated 4 or more visited in a group of 1-4 (vs. 21%) or 25 or more (18% vs. 8%).
Support permit system/ encounters?	.226	14.58	.006	41% of those who boated 4 or more times reported being strongly opposed to a permit system if it resulted in fewer encounters on the river (vs 21%).
Number of years boating rivers?	.223	14.37	.006	24% of those who boated 4 or more times reported having boated 16-20 years (vs 11%).
Close to home	.219	13.62	.009	15% of those who boated 4 or more times responded the LD being close to home was extremely important (vs 5%).
No river permit required	.215	12.39	.015	30% of those who boated 4 or more times responded the absence of a required permit was extremely important (vs 13%).
When did you plan your launch?	.215	13.25	.021	68% of those who boated 4 or more times responded having determined their launch date from 2 to 30 days in advance (vs 46%).
Support permit system/ riparian?	.206	11.97	.017	34% of those who boated 4 or more times reported being strongly opposed to a permit system which resulted in less degradation of campsites and ... (vs 16%).
Gender	.206	12.09	.001	87% of those who boated 4 or more times were more likely to be male (vs 66%).
Was fishing your primary activity?	.154	6.89	.009	31% of those who boated 4 or more times were more likely to respond fishing was their primary activity (vs. 17%).



## Boated 89-91 vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Number of years boating rivers	.558	89.99	.001	85% of 89-91 boaters reported boating rivers 11-15, 16-20, or more than 20 years (vs 30%).
Whose boat did you use?	.297	25.17	.001	50% of 89-91 boaters used their own boat (vs 23%).
Deal with present use rather than face the chance of not...	.271	21.22	.001	69% of 89-91 boaters strongly agreed with dealing with present use rather than face not getting on the river because of a permit system (vs. 49%).
Age	.257	18.95	.001	69% of 89-91 boaters responded they were 41 years of age or older (vs 42%).
Assign designated campsites	.253	10.56	.032	52% of 89-91 boaters responded they strongly opposed the use of designated campsites (vs 39%).
How many times have you boated LD in last 12 months?	.243	17.35	.002	45% of 89-91 boaters responded having boated the Lower Deschutes 2-4 times in the last 12 months (vs 32%).
Overall, support a permit system?	.229	15.06	.005	66% of 89-91 boaters overall supported a permit system (vs 45%).
Use levels should be reduced	.215	13.22	.010	69% of 89-91 boaters responded they strongly disagree that present use levels need to be reduced (vs 44%).
Riverside camping	.202	11.74	.019	69% of 89-91 boaters responded riverside camping was very or extremely important (vs 50%).
Gender	.173	8.61	.003	83% of 89-91 boaters were men (vs 67%).

### 30 and younger vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Income	.342	31.95	.001	50% of boaters age 30 and younger had a household income of 15-30k or 30-50k per year (vs 19%).
Camp only in designated campsites	.321	16.95	.002	26% of boaters age 30 and younger responded they didn't know about designated campsites (vs 6%).
Within campers, # of groups camped within sight and sound?	.321	15.92	.003	63% of boaters age 30 and younger camped within sight and sound of 1-4 groups on Day 1 (vs 55%), 17% camped within sight and sound of more than 20 groups on Day 1 (vs 8%), and 2% camped within sight and sound of 0 groups on Day 1 (vs 23%).
Number of years boating rivers	.301	25.82	.001	72% of boaters age 30 and younger reported boating for 1-5 or 6-10 years (vs 43%).
Boated between 1985-1983	.263	19.92	.001	79% of boaters age 30 and younger reported boating 0 times between 1985-1983 (vs 61%).
No river permit required	.256	17.37	.002	57% of boaters age 30 and responded the lack of a river permit was not important (vs 35%).
Boated between 1982-1980	.237	16.16	.001	92% of boaters age 30 and younger reported boating 0 times between 1982-1980 (vs 69%).
Boated before 1980	.227	14.85	.005	96% of boaters age 30 and younger reported boating 0 times before 1980 (vs 77%).
Owner of the boat	.223	13.98	.001	55% of boaters age 30 and younger responded they rented a boat (vs 36%), 18% used their own boat (vs. 37%).
Do you always carry a portable toilet?	.210	7.35	.007	18% of boaters age 30 and younger responded they always carry a portable toilet (vs 40%).
Overall, support a permit system?	.195	10.72	.030	15% of boaters age 30 and younger responded they strongly opposed a permit system (vs 29%).

## 50 and older vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Number of years boating rivers	.291	23.98	.001	61% of boaters age 50 and older reported boating for 16 years or longer (vs 26%).
Within campers, preference on # camped within sight and sound?	.276	12.23	.007	8% of boaters age 50 and older responded the number of groups that camped within sight and sound was fewer than they prefer (vs 0%).
Where did you launch?	.264	15.99	.001	80% of boaters age 50 and older launched in Segment 1 (opposed to Segment 2) (vs 46%).
Which segments were boated?	.252	13.87	.001	15% of boaters age 50 and older boated Seg. 1a (vs 7%), 65% boated Seg. 1+2 (vs 42%), and 21% boated Seg. 2 (vs 51%).
Running rapids	.240	16.47	.002	15% of boaters age 50 and older responded running rapids was extremely important (vs 38%).
Education	.238	16.22	.006	43% of boaters age 50 and older completed a post graduate degree (vs 21%).
Boated between 1985-1983	.227	14.90	.005	30% of boaters age 50 and older reported having boated 2 or more between 1985-1983 (vs 13%).
In sight of another boat not in your party?	.223	14.18	.007	58% of boaters age 50 and older responded they were in sight of another boat not in their party almost never, or ¼ of the time (vs 30%).
Discourteous behavior	.193	10.69	.014	87% of boaters age 50 and older responded encountering discourteous behavior rarely or never (vs 65%).

## 1-7 day planners vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Which segments were boated?	.297	19.30	.001	25% of 1-7 day planners boated Seg. 1a (vs 5%), 28% boated Seg. 1+2 (vs 52%).
Number of people in your group?	.262	19.70	.001	44% of 1-7 day planners reported visiting in a group of 1-4 (vs 21%).
Owner of the boat	.241	16.35	.001	50% of 1-7 day planners reported using their own boat (vs 27%) but only 21% reported renting a boat (vs 46%).
Running rapids	.203	11.78	.019	19% of 1-7 day planners responded running rapids was not important (vs. 7%).
Good weather	.194	10.70	.030	29% of 1-7 day planners responded good weather was not, or slightly, important (vs 12%).

## Fishing Primary Activity vs. Not

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Running rapids	.701	141.06	.001	84% of boaters whose primary activity was fishing responded running rapids was not, slightly, or moderately important (vs 16%).
Utilize a drift boat?	.700	139.82	.001	64% of boaters whose primary activity was fishing utilized a drift boat (vs 2%).
Quality of trout fishing	.661	124.46	.001	91% of boaters whose primary activity was fishing responded the quality of trout fishing was very or extremely important (20%).
Where did you takeout?	.629	94.84	.001	67% of boaters whose primary activity was fishing took out in Segment 1 (33% took out in Segment 2).
Which segments were boated?	.583	74.76	.001	65% of boaters whose primary activity was fishing boated Seg. 1+2, 33% boated Seg. 1a.
Where did you launch?	.483	54.09	.001	98% of boaters whose primary activity was fishing launched in Segment 1 (2% launched in Segment 2).
Quality of steelhead fishing	.479	64.37	.001	46% of boaters whose primary activity was fishing responded the quality of steelhead fishing was extremely important (vs 10%).
Within non-campers, how many groups did you see?	.462	24.37	.001	67% of boaters whose primary activity was fishing saw 1-4 groups per day (13%).
Utilize a paddle raft?	.444	56.10	.001	5% of boaters whose primary activity was fishing utilized a paddle raft (59%).
Number of people in your group?	.374	40.41	.001	53% of boaters whose primary activity was fishing visited in a group of 1-4 (vs 17%).
Good weather	.349	37.86	.001	64% of boaters whose primary activity was fishing responded good weather was slightly or moderately important (vs 28%).
Within campers, encounters vs. what you prefer to see?	.319	16.64	.001	57% of boaters whose primary activity was fishing saw more numbers of groups than they prefer (vs 27%).
In sight of another boat not in your party?	.318	28.78	.001	60% of boaters whose primary activity was fishing were in sight of another boat almost never, or 1/4 of the time (29%).
Owner of the boat	.317	28.33	.001	53% of boaters whose primary activity was fishing used their own boat (vs 26%), 23% used a boat on a commercially-guided trip (vs 14%).
Size of boating parties too large	.311	27.49	.001	41% of boaters whose primary activity was fishing responded the size of boating parties was a moderate or serious problem (vs 14%).
Within campers, how many groups did you see?	.306	13.84	.008	78% of boaters whose primary activity was fishing saw 5-10 or 11-20 groups on Day 1 (vs 44%).
Getting together with friends and family	.301	25.88	.001	25% of boaters whose primary activity was fishing responded getting together with friends and family was very important (vs 44%).

### Fishing Primary Activity vs. Not continued...

Gender	.299	25.35	.001	98% of boaters whose primary activity was fishing were male (vs 65%).
Do you always carry a portable toilet?	.292	13.86	.001	57% of boaters whose primary activity was fishing responded they carried a portable toilet (vs 26%).
Too much time waiting at rapids	.291	24.38	.001	89% of boaters whose primary activity was fishing responded waiting at rapids was not a problem (vs 69%).
Notice human waste?	.276	21.66	.001	65% of boaters whose primary activity was fishing noticed human waste almost never (vs 84%).
How many times have you boated LD in last 12 months?	.270	21.06	.001	21% of boaters whose primary activity was fishing responded they boated 10 or more times in the last 12 months (vs 4%).
Too many comm.. ops. and/or rentals	.241	16.47	.002	45% of boaters whose primary activity was fishing responded too many commercial outfitters and/or rental boats was a moderate or serious problem (vs 20%).
Parking at put-in and take-out points	.233	15.67	.003	75% of boaters whose primary activity was fishing responded inadequate parking was not a problem (vs 50%).
Too many people floating the river?	.231	15.35	.004	49% of boaters whose primary activity was fishing responded that too many people floating the river was a moderate or serious problem (vs 27%).
Boated between 2000-1998?	.218	13.70	.008	34% of boaters whose primary activity was fishing responded they boated between 2000 and 1998 (vs. 16%).
Are you a commercial guide?	.189	10.29	.001	12% of boaters whose primary activity was fishing were guides (vs 2%).

## Boated Segment 1a vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Running rapids	.585	75.30	.001	75% of Segment 1a boaters reported running rapids was not, or slightly important (vs 9%).
Within non-campers, how many groups did you see?	.496	20.43	.001	55% of Segment 1a boaters saw 5-10 groups per day (vs 14%).
Was fishing your primary activity?	.463	47.21	.001	85% of Segment 1a boaters responded fishing was their primary activity (vs 17%).
Number of people in your group?	.351	27.32	.001	70% of Segment 1a boaters visited in the group of 1-4 (vs 21%).
Quality of trout fishing	.342	25.79	.001	70% of Segment 1a boaters responded the quality of trout fishing was extremely important (vs 22%).
Getting together with friends and family	.297	19.33	.001	25% of Segment 1a boaters respond getting together with friends and family was extremely important (vs 48%).
When did you plan your launch?	.294	18.87	.002	53% of Segment 1a boaters determined their launch date 2-7 days in advance (15%).
Owner of the boat	.291	18.40	.001	70% of Segment 1a boaters used their own boat, or a friend's/family boat (vs 44%), 30% used a boat on a commercially-guided trip (vs 10%).
Good weather	.283	17.56	.001	20% of Segment 1a boaters responded good weather was very or extremely important (vs 60%).
Quality of steelhead fishing	.254	14.04	.001	65% of Segment 1a boaters responded the quality of steelhead fishing was very or extremely important (30%).

## Boated Segment 1+2 vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
In sight of another boat not in your party?	.593	76.99	.001	67% of Segment 1+2 boaters responded been in sight of another boat not in their party almost never, or 1/4 of the time (vs 15%).
Within campers, how many groups did you see?	.459	25.27	.001	62% of Segment 1+2 boaters saw 1-4 or 5-10 groups on Day 1 (18%).
Within campers, # of groups camped within sight and sound?	.430	23.15	.001	83% of Segment 1+2 boaters reported camping within sight and sound of 0-4 groups on Day 1 (vs 60%).
Within campers, # of groups that walked through campsite?	.429	22.50	.001	68% of Segment 1+2 boaters reported 0 groups walked through their campsite (vs 28%).
Riverside camping	.428	40.23	.001	78% of Segment 1+2 boaters responded riverside camping was very or extremely important (vs 44%).
When did you plan your launch?	.280	17.17	.004	58% of Segment 1+2 boaters determined their launch date 1-6+ months in advance (vs 38%).
Waiting at the launching ramp	.269	16.03	.001	25% of Segment 1+2 boaters waited more than 20 minutes at the launching ramp (vs 9%).
Peace and Solitude	.243	13.01	.011	88% of Segment 1+2 boaters responded peace and solitude was moderately, very, or extremely important (vs 69%).
Age	.236	12.11	.007	30% of Segment 1+2 boaters were more than 50 years old (vs 15%).
Owner of the boat	.224	10.85	.013	43% of Segment 1+2 boaters used their own boat (vs 30%).
Was fishing your primary activity?	.202	8.98	.003	32% of Segment 1+2 boaters responded fishing was their primary activity (vs 15%).
Gender	.199	8.63	.003	86% of Segment 1+2 boaters were male (vs 70%).



## Boated Segment 2 vs. All other

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
In sight of another boat not in your party?	.627	86.19	.001	74% of Segment 2 boaters responded been in sight of another boat not in their party 3/4, or almost all of the time (vs 16%).
Within non-campers, how many groups did you see?	.531	23.36	.001	64% of Segment 2 boaters saw more than 20 groups per day (vs 12%).
Within campers, # of groups camped within sight and sound?	.512	32.72	.001	38% of Segment 2 boaters camped within sight and sound of more than 20 groups on Day 1 (vs 2%).
Was fishing your primary activity?	.471	48.74	.001	1% of Segment 2 boaters responded fishing was their primary activity (vs 41%).
Running rapids	.464	47.46	.001	92% of Segment 2 boaters responded running rapids was very or extremely important (vs 50%).
Within campers, how many groups did you see?	.415	20.54	.001	65% of Segment 2 boaters saw more than 20 groups on Day 1 (vs 19%).
Within campers, # of groups that walked through campsite?	.407	20.19	.001	22% of Segment 2 boaters reported 5 or more groups/day on Day 1 walked through their campsite (vs 2%).
Riverside camping	.367	29.58	.001	35% of Segment 2 boaters responded riverside camping was not, or slightly important (vs 8%) (presumably because they are primarily day users).
Quality of trout fishing	.359	28.42	.001	63% of Segment 2 boaters responded the quality of trout fishing was not, or slightly important (vs 32%).
Peace and solitude	.325	23.31	.001	36% of Segment 2 boaters responded peace and solitude was not or slightly important (vs 11%).
Good weather	.314	21.68	.001	73% of Segment 2 boaters responded good weather was very or extremely important (vs 42%).
Gender	.273	16.23	.001	35% of Segment 2 boaters were female (vs 12%).
Quality of steelhead fishing	.267	15.42	.004	49% of Segment 2 boaters responded the quality of steelhead fishing was not important (vs 31%).
Do you always carry a portable toilet?	.262	9.22	.002	11% of Segment 2 boaters responded they always carry a portable toilet (vs 42%).
Age	.256	14.32	.003	53% of Segment 2 boaters were age 40 or younger (vs 36%).
Waiting at the launching ramp	.235	12.28	.006	29% of Segment 2 boaters waited 1-5 minutes (vs 15%), 31% waited 6-19 minutes (vs 23%).

## Not-at-All to Slightly Crowded vs. Not

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Within non-campers, encounters vs. what you expect to see?	.579	39.25	.001	39% of not-at-all to slightly crowded boaters saw fewer numbers of groups than they expected (vs 0%).
With non-campers, encounters vs. what you prefer to see?	.531	32.98	.001	59% of not-at-all to slightly crowded boaters saw about the number of groups they prefer (vs 26%).
In sight of another boat not in your party?	.441	55.66	.001	59% of not-at-all to slightly crowded boaters responded being in sight of another boat not in their party almost never, or 1/4 of the time (vs 19%).
Within campers, encounters vs. what you prefer to see?	.437	31.34	.001	66% of not-at-all to slightly crowded boaters saw about the number of groups they prefer (vs 33%).
Within campers, encounters vs. what you expect to see?	.426	30.34	.001	26% of not-at-all to slightly crowded boaters saw fewer numbers of groups than they expected (vs 4%).
Within campers, # preferred vs. # who camped within sight and sound?	.384	23.21	.001	67% of not-at-all to slightly crowded boaters camped within sight and sound of about the number of groups they prefer (vs 35%).
Within campers, how many groups did you see?	.365	19.67	.001	65% of not-at-all to slightly crowded boaters saw 1-4 or 5-10 groups on Day 1 (vs 33%).
Within campers, # expected vs. # who camped within sight and sound?	.344	18.80	.001	27% of not-at-all to slightly crowded boaters camped within sight and sound of fewer numbers of groups than they expected (vs 8%).
Within non-campers, how many groups did you see?	.330	12.39	.006	37% of not-at-all to slightly crowded boaters saw 1-4 or 5-10 groups per day (vs 14%).
Use levels should be reduced	.308	26.79	.001	41% of not-at-all to slightly crowded boaters strongly disagreed that present use levels need to be reduced (vs 19%).
Support permit system/encounters?	.308	26.84	.001	40% of not-at-all to slightly crowded boaters strongly opposed a permit system if it resulted in fewer encounters on the river or in camp (vs 19%).
Waiting at the launching ramp	.288	24.00	.001	48% of not-at-all to slightly crowded boaters were more likely to respond they did not wait at the launching ramp (vs 22%).

### Not-at-All to Slightly Crowded vs. Not continued...

Overall, support a permit system?	.280	22.25	.001	38% of not-at-all to slightly crowded boaters responded they strongly opposed a permit system (vs 18%).
Deal with present use rather than face the chance of not...	.266	20.25	.001	67% of not-at-all to slightly crowded boaters responded they strongly agreed with dealing with present use...(vs 43%).
Discourteous behavior	.249	17.78	.001	67% of not-at-all to slightly crowded boaters responded they rarely or never observed discourteous behavior (vs 60%).
Visitation should be allowed to increase without controls	.246	17.18	.002	15% of not-at-all to slightly crowded boaters responded they strongly opposed allowing visitation to increase without controls (vs 35%).
Overall quality	.224	13.59	.004	34% of not-at-all to slightly crowded boaters responded the overall quality of the area is getting better (vs 21%).
Which segments were boated?	.221	10.70	.005	58% of not-at-all to slightly crowded boaters boated Seg. 1+2 (vs 37%), only 33% boated Seg. 2 (vs 55%).
Support permit system/riparian?	.222	13.82	.008	32% of not-at-all to slightly crowded boaters responded they strongly opposed a permit system to reduce impacts to campsites and riparian areas (vs. 15%).
Where did you launch?	.212	10.36	.001	66% of not-at-all to slightly crowded boaters launched in Segment 1 (vs 44%), 34% launched in Segment 2 (vs 56%).

### **Slightly to Moderately Crowded vs. Not**

Within non-campers, encounters vs. what you expect to see?	.346	13.99	.003	60% of slightly to moderately crowded boaters saw about the number of groups they expected (vs 43%).
------------------------------------------------------------	------	-------	------	------------------------------------------------------------------------------------------------------

## Moderately to Extremely Crowded vs. Not

Comparison	Cramer's V	$\chi^2$	Sig. (p)	Explanation
Within non-campers, encounters vs. what you expect to see?	.502	29.52	.001	58% of moderately to extremely crowded boaters saw more numbers of groups than they expected (vs 14%).
With non-campers, encounters vs. what you prefer to see?	.525	32.26	.001	83% of moderately to extremely crowded boaters saw more numbers of groups than they prefer (vs 27%).
Use levels should be reduced	.405	46.47	.001	62% of moderately to extremely crowded boaters moderately or strongly agreed that present use levels need to be reduced (vs 25%).
Support permit system/encounters?	.398	44.58	.001	70% of moderately to extremely crowded boaters moderately or strongly favored a permit system if it resulted in fewer encounters on the river or in camp (36%).
Within campers, # preferred vs. # who camped within sight and sound	.395	24.51	.001	76% of moderately to extremely crowded boaters camped within sight and sound of more numbers of groups than they prefer (vs 30%).
Deal with present use rather than face the chance of not...	.395	44.69	.001	37% of moderately to extremely crowded boaters moderately or strongly disagreed with preferring to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions (vs 7%).
Within campers, encounters vs. what you prefer to see?	.389	24.80	.001	71% of moderately to extremely crowded boaters saw more numbers of groups than they prefer (vs 27%).
Discourteous behavior	.386	42.66	.001	57% of moderately to extremely crowded boaters responded observing discourteous behavior sometimes or often (vs 21%).
Within non-campers, how many groups did you see?	.400	18.82	.001	83% of moderately to extremely crowded boaters saw more than 20 groups per day (vs 41%).
In sight of another boat not in your party?	.372	39.65	.001	51% of moderately to extremely crowded boaters responded they were in sight of another boat not in their party almost all of the time (vs 23%).
Support permit system/riparian?	.361	36.50	.001	41% of moderately to extremely crowded boaters strongly favored a permit system if it resulted in less degradation of campsites and the surrounding riparian areas (vs 12%).
Within campers, encounters vs. what you expect to see?	.346	19.94	.001	43% of moderately to extremely crowded boaters saw more numbers of groups than expected (vs 12%).
Overall quality	.343	31.82	.001	29% of moderately to extremely crowded boaters responded the overall quality of the river was getting worse (vs 5%).

### Moderately to Extremely Crowded vs. Not Continued...

Visitation should be allowed to increase without controls	.335	31.91	.001	51% of moderately to extremely crowded boaters strongly disagreed that visitation should be allowed to increase without controls (vs 18%).
Overall, support a permit system?	.334	31.66	.001	Overall, 64% of moderately to extremely crowded boaters moderately or strongly favored a permit system (vs 35%).
Within campers, # expected vs. # who camped within sight and sound?	.288	13.16	.004	42% of moderately to extremely crowded boaters were more likely to respond the number of people who camped within sight and sound was more than they expected (vs 17%).
Waiting at the takeout ramp	.231	15.42	.001	55% of moderately to extremely crowded boaters responded they waited 1-19 minutes before taking their boat out of the river (vs 34%).
Waiting at the launching ramp	.221	14.06	.003	60% of moderately to extremely crowded boaters responded they waited 6 or more minutes to launch their boat (vs 36%).

## Campers vs. day users

Which segments were boated?	.625	86.81	.001	71% of campers boated Segment 1+2, 80% of day users boated Segment 2.
In sight of another boat not in your party?	.394	44.21	.0014	48% of campers responded being in sight of another boat not in their party almost never, or 1/4 of the time (vs 18%).
Owner of the boat	.298	24.93	.001	44% of campers to rented a boat (38%), 38% of campers used their own boat (vs 22%).
Too much law enforcement presence	.218	13.60	.009	85% of day users responded too much law enforcement presence was not a problem (vs 71%).
1-7 day planners	.199	11.43	.001	14% of campers were 1-7 day planners (vs 30%).

**RECEIVE A FREE RIVER PRIZE!!**

Mail your Survey by October 6th

Summer 2000

**2000 LOWER DESCHUTES RIVER BOATER SURVEY**

Dear Lower Deschutes Boater,

Recently you visited the Lower Deschutes Wild and Scenic River and agreed to participate in a boater survey – Thank you for making a difference! A study of this type has not been done in 13 years! Since 1987 the River has changed significantly, and the managing agencies (Bureau of Land Management, Oregon State Parks, and the Confederated Tribes of the Warm Springs Reservation) are facing dramatic and diverse challenges. We need your help by providing us with crucial opinions and feedback. Please help with this important work and guide us into the next century!!

Please answer every question. There are no right or wrong answers. The best response is the one you believe represents your perceptions and experiences. Note your responses should only reference the Lower Deschutes River, from the Warm Springs Launching Area to the confluence with the Columbia River. **When responding to the following questions please keep in mind which section(s) you boated when you were contacted about participating in the survey.** Thank you for your participation!!! OMB# 0569-0108 Exp. January 31, 2003.

Sincerely,

Keith M. Brown  
Recreation Technician  
Bureau of Land Management  
541-416-6881

**TRIP CHARACTERISTICS**

1. Location of Put-in \_\_\_\_\_ and Take-out \_\_\_\_\_
2. Date in: \_\_\_\_\_ Date out: \_\_\_\_\_
3. How many people were in your group? Ave = 9.7 dogs? \_\_\_\_\_
4. Type and number of craft:  

_____ Paddle Raft	_____ Oar Raft	_____ Innertube
_____ Drift Boat	_____ Cataract	_____ Canoe
_____ Inflatable Kayak	_____ Kayak	_____ Other _____
5. Are you a commercial guide on the Deschutes?  
☐ Yes ☐ No Yes - 4%, NO - 96%
6. Whose boat did you use on the Deschutes? (if more than one type, select the type you were in)  

<u>15</u> On a commercially-guided trip	<u>In percent</u>
<u>41</u> Rented a boat	
<u>32</u> Used my own boat	
<u>12</u> Used a friend's/family boat	
7. How would you describe yourself or your group? In percent  

<u>3</u> Commercial guide or outfitter	
<u>11</u> Passenger on commercially-guided trip	
<u>77</u> Non-commercial, family and friends	
<u>8</u> Organized Group: Scouts, Church, School, Park & Recreation	
<u>1</u> Solo, self only	
8. How far in advance did you determine your launch date? In percent  

<u>2</u> Less than 1 day	<u>29</u> From 1 to 3 months
<u>19</u> From 2 to 7 days	<u>10</u> From 3 to 6 months
<u>34</u> From 8 to 30 days	<u>7</u> Over 6 months



9. Approximately how many times have you boated the Deschutes in the past 12 months? Ave = 5.0

10. List other rivers you have boated in the last 12 months.

11. How many times have you boated the Deschutes in the following time periods?

10 2000-1998    1.8 1988-1986  
5.4 1997-1995    1.6 1985-1983  
3.4 1994-1992    1.5 1982-1980  
2.6 1991-1989    1.4 Pre-1980

Averages...

12. Counting this year, how many years have you been boating rivers? (If this was your first year, mark 1)

Ave. = 12.3 years

### VISITOR PREFERENCES

1. On the day you were contacted to participate in the survey, was fishing your primary activity on the Deschutes River? ☐ Yes ☐ No Yes - 21%, NO - 79%
2. People have a variety of reasons why they boat the Deschutes. Please indicate how important each of the following is to you personally.

<u>In percent</u>	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Running rapids	9	6	16	35	34
The quality of trout fishing	40	11	13	14	22
The quality of steelhead or salmon fishing	44	11	16	12	17
Getting together with friends and family	1	3	11	39	46
Being with my dog	76	9	7	7	1
Peace and solitude	11	12	28	29	20
This river is close to home	28	15	31	18	8
Viewing scenery and wildlife	2	9	29	37	23
Photography	35	27	23	9	6
Good weather	7	9	26	40	18
Riverside camping	14	9	21	35	21
Couldn't get a permit on another river	80	8	7	3	2
No river permit required	41	8	19	14	18

### CAMPING

ONLY respond to the following questions if you were on an overnight trip at the time you were contacted about participating in the survey. All others please skip to question 1 in the "Management Issues" section.

1. Please respond for each day of your river trip. Day 1 is the day you launched. When responding to questions asking for "number of groups" please use the following categories: A=0, B=1-4, C=5-10, D=11-20, E=More than 20.

	Day 1	Day 2	Day 3
Where did you camp? (List camp name or river mile)			
Number of groups you saw that day (while boating and camping)			
Number of groups that camped within sight & sound of your campsite			
The number of groups that walked through your campsite			

2. How did your boating experience compare with what you expected to see? (check one box for each line)

<u>In percent</u>	Fewer than I Expected	About what I Expected	More than I Expected	Had no Expectation
The number of groups you saw during the trip	14	65	19	2
The number of groups that camped within sight & sound of your campsite	16	61	22	1

3. How did your boating experience compare with what you prefer to see? (check one box for each line)

<u>In percent</u>	Fewer than I Prefer	About what I Prefer	More than I Prefer	Had no Preference
The number of groups you saw during the trip	2	48	36	14
The number of groups that camped within sight & sound of your campsite	2	50	39	9

4. How important is each of the following factors when you are looking for a campsite?

<u>In percent</u>	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Shade	4	9	38	37	12
Good place to tie up boats	8	7	43	35	7
Has an outhouse/toilet	6	8	24	30	32
Good fishing water	37	15	16	15	17
Doesn't have too much bare ground	26	30	31	12	1
Away from railroad tracks	32	19	31	11	7
Away from roads and vehicle access	13	17	29	26	15

In percent	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Out of sight of fences	62	21	12	4	1
Out of sight (screening) of other camps	13	28	35	17	7
Out of sound of other camps	13	22	33	24	8
Being next to other camps	56	18	18	5	3

5. This set of items concerns problems you may have run into during your visit to the Deschutes River. Please indicate how much of a problem each item was for you by placing a mark in one of the spaces next to each item.

In percent	No Problem at All	A Small Problem	A Moderate Problem	A Serious Problem	Don't Know
Lack of campsites	37	25	26	11	1
Lack of campsites with an outhouse	44	17	23	11	5
Campsite location poorly marked	60	21	12	6	1
Difficulty finding an available campsite due to overcrowding	36	26	19	18	1
Litter in the campsite	56	30	9	4	1
Large fire rings	76	11	5	4	4
Inadequate disposal of human body wastes	56	21	10	12	1
Number of toilets/outhouses on river	45	26	18	10	1
Number of people being disruptive in the camps	59	23	12	5	1
Campsites are too close to each other	38	41	16	5	0
People staying at campsites too long	72	11	6	3	8
Groups sending someone ahead to secure a campsite	55	11	14	14	6

6. To reduce competition for campsites, and provide privacy in campsites, how supportive are you of the following management actions?

In percent	Strongly Favor	Moderately Favor	Moderately Oppose	Strongly Oppose	Don't Know
Require boaters camp only in designated campsites	20	22	21	26	11
Assign designated campsites to boaters	7	18	18	45	12

7. Do you plan to always use campsites with outhouses?

☐ Yes ☐ No  
61% 39%

8. Did you carry an approved portable toilet system on this trip?

☐ Yes ☐ No  
34% 66%

9. Did you use an approved portable toilet system on this trip?

☐ Yes ☐ No  
20% 80%

10. How often did you have to share a campsite with another group?

55 Rarely or never  
18 About 1/4 of the time  
10 About 1/2 of the time  
4 About 3/4 of the time  
13 Almost always

In percent

11. How often did you have to pass up a good-quality campsite and settle for a poor-quality site because the first was occupied?

36 Rarely or never  
19 About 1/4 of the time  
25 About 1/2 of the time  
9 About 3/4 of the time  
11 Almost always

12. How often did you send a boat ahead to be sure of getting a good campsite?

80 Rarely or never  
4 About 1/4 of the time  
6 About 1/2 of the time  
4 About 3/4 of the time  
6 Almost always

## MANAGEMENT ISSUES

1. Understanding the kinds of problems you may have encountered while boating the Deschutes River will help us manage the river now, and in the future. To what extent did you find each of the following to be a problem during your trip?

In percent	Not a Problem	A Small Problem	A Moderate Problem	A Serious Problem	Don't Know
Poor condition of launch facilities	78	13	6	2	1
Too few put-in and take-out points	71	15	9	4	1
Too many people floating the river	46	23	19	12	0
Too few toilet facilities at put-in and take-out	55	28	12	4	1
Not enough garbage cans/dumpsters at put-in and take-out	61	21	12	5	1
Inadequate maintenance of existing outhouses	54	24	11	9	2
Not enough parking at put-in and take-out points	56	20	14	9	1

In percent	Not a Problem	A Small Problem	A Moderate Problem	A Serious Problem	Don't Know
Too many people being disruptive on river	56	28	11	4	1
Too many intoxicated people, or people using drugs, on the river	63	17	13	5	2
Too much law enforcement presence	76	10	7	5	2
Not enough law enforcement presence	76	10	9	3	2
Excessive number of unskilled boaters	47	28	15	8	2
Too much litter and garbage along river	54	33	9	4	0
Size of boating parties too large	62	17	13	7	1
Too many commercial outfitters and/or rental boats on the river	55	19	12	13	1
Too few places to buy a boater pass	72	13	7	4	4
Too much time spent having to wait at rapids	74	20	5	1	0

2. A permit system is one of the options to control use on the Deschutes River. The permit system would restrict boater access by limiting the number of boaters per day on the river. Please check how you feel about each of the following statements and questions.

In percent	Strongly Agree	Moderately Agree	Moderately Disagree	Strongly Disagree	Don't Know
Present use levels need to be reduced	8	27	27	28	10
Visitation should be allowed to increase without controls	7	20	38	26	9
I would prefer to deal with present levels of use rather than face the chance of not getting on the river because of permit system restrictions	53	30	7	7	3

In percent	Strongly Favor	Moderately Favor	Moderately Oppose	Strongly Oppose	Don't Know
Overall, would you support a permit system?	10	32	26	26	6
Would you support a permit system if it resulted in fewer encounters on the river or in camp?	8	37	23	27	5
Would you support a permit system if it resulted in less degradation of campsites and the surrounding riparian areas?	19	37	14	22	8

3. If it was not possible to get a permit on the Deschutes River, would you take a trip on another river? ☐ Yes ☐ No YES - 56%, NO - 44%  
If YES, what other river would you boat? \_\_\_\_\_

4. If a permit system was implemented, what method(s) would you prefer to reserve your launch date? (choose any combination)

16 In person at office 68 Phone in  
33 Mail in 68 Internet

In percent

5. Do you think the section(s) you boated when you were contacted about participating in the survey was(were) crowded? (circle one number)

In percent

not at all crowded		slightly crowded			moderately crowded		extremely crowded	
1	2	3	4	5	6	7	8	9
12	12	17	13	8	13	12	7	6

If you have already responded in the camping section, please skip to question 9.

6. How many groups did you see during your day on the Deschutes River? . When responding please use the following categories: A=0, B=1-4, C=5-10, D=11-20, E=More than 20. A=0%, B=3%, C=20%, D=23%, E=54%  
\_\_\_\_\_ groups

7. How did the above encounters compare with what you expected to see?

15 Fewer than I expected  
48 About what I expected  
27 More than I expected  
10 I had no expectation

In percent

8. How did the above encounters compare with what you prefer to see?

5 Fewer than I prefer  
39 About what I prefer  
44 More than I prefer  
12 I had no preference

In percent

9. About how much of the time were you in sight of another boat, not in your party?

10 Almost never  
26 About 1/4 of the time  
20 About 1/2 of the time  
14 About 3/4 of the time  
30 Almost all the time  
0 I don't know

In percent

10. How long did you have to wait for people to get out of the way before you could use the launch area at the put-ins and take-outs?

I waited about ...

\_\_\_ minutes at my put-in.

\_\_\_ minutes at my take-out.

Ave. = 8.8 minutes

Ave. = 5.7 minutes

11. How often did you have to pass up good fishing water because another angler was already there?

16 Almost never

12 About 1/4 of the time

8 About 1/2 of the time

2 About 3/4 of the time

1 Almost always

61 Not fishing

In percent

12. How often did you notice human waste?

80 Rarely or never

11 About 1/4 of the time

2 About 1/2 of the time

2 About 3/4 of the time

1 Almost every place I stopped

4 I don't know

In percent

13. How often did you encounter discourteous or inconsiderate behavior from other Deschutes users?

70 Rarely or never

27 Sometimes (once or twice a day)

3 Often (more than twice a day)

In percent

14. If you have visited the Deschutes river before, would you say the overall quality of the area is:

26 Getting better?

47 About the same?

11 Getting worse?

16 First Trip?

In percent

Do you have any comments on this topic? Please use the "Mailing Instructions" page if necessary.

16. Have you noticed any positive or negative changes on the Deschutes River in the last five years?

Positive: \_\_\_\_\_

Negative: \_\_\_\_\_

17. Do you have any additional comments? Please respond below or on the next page.

### Some Information About You

All of your answers are confidential and will never be identified with you personally.

1. Are you?

☐ Male ☐ Female

Male - 72%, Female - 28%

2. What is your age? \_\_\_ years

Ave. = 40 years

3. What is the highest level of education you have completed? (Check one)

☐ grade school ☐ some high school ☒ high school graduate

☒ some college ☐ college graduate ☐ post graduate

In percent

4. What is your approximate household income? (Check one)

☒ \$0-\$14,999 ☐ \$15,000-\$29,999 ☐ \$30,000-\$49,999 ☐ \$50,000-\$69,999 ☐ \$70,000-\$99,999 ☐ \$100,000-\$129,999 ☐ \$130,000-\$159,999 ☐ \$160,000-\$199,999 ☐ \$200,000 or more

☐ \$15,000-\$29,999 ☐ \$30,000-\$49,999 ☐ \$50,000-\$69,999 ☐ \$70,000-\$99,999 ☐ \$100,000-\$129,999 ☐ \$130,000-\$159,999 ☐ \$160,000-\$199,999 ☐ \$200,000 or more

☐ \$15,000-\$29,999 ☐ \$30,000-\$49,999 ☐ \$50,000-\$69,999 ☐ \$70,000-\$99,999 ☐ \$100,000-\$129,999 ☐ \$130,000-\$159,999 ☐ \$160,000-\$199,999 ☐ \$200,000 or more

☐ \$15,000-\$29,999 ☐ \$30,000-\$49,999 ☐ \$50,000-\$69,999 ☐ \$70,000-\$99,999 ☐ \$100,000-\$129,999 ☐ \$130,000-\$159,999 ☐ \$160,000-\$199,999 ☐ \$200,000 or more

5. What ethnic group would you place yourself? (Check one)

☐ American Indian, Eskimo, Aleut

☐ Asian or Pacific Islander

☐ Black or African American

☐ Hispanic or Latino

☐ Native Hawaiian

☒ White

☐ Other

In percent

Thank you for your time and participation!!!

## Instructions for Administering Deschutes Boater Survey Cards

### In General:

- Only boaters can participate in the survey.
- Boaters must be 18 or older to participate.
- Guides can be included, but their birthday must be the one closest to the survey date, AND they can only participate once.
- Upon initial contact:
  - “Hello, my name is YOUR NAME and I am a Deschutes River Ranger.”
  - “The Prineville BLM office is conducting a survey of Deschutes River Boaters to better understand -
  - “**Why do you come to the Deschutes?**” (demographics and motivations)
  - We are interested in –
  - “**Visitor responses to present and potential management actions.**”
  - You should know -
  - “**Results from this study may be used in future Deschutes River management decisions.**”
  - “Would you be willing to participate in a survey of Deschutes River Boaters?”
- Either yourself or the visitor can fill out the front of the card, **but YOU must fill out the back of the card at the time of contact.** The survey will be sent through the mail in three to four weeks. Ask participants to fill out and return the survey as soon as possible, utilizing the enclosed self-addressed envelope. Visitors will not be contacted via telephone unless there is a problem with the mail (i.e. the survey is returned because of a bad address). Inform visitors the survey should take about 15 minutes to complete.
- Be as consistent as possible!
  - Survey the difficult groups
  - Track down the individual in the group whose birthday is closest to the survey date

### Section 1 Boaters (mostly Warm Springs and Trout Creek, but anywhere you can find them)

Survey each group (fish or raft).  
Select 25% of the group to participate.  
Choose the boater whose birthday is closest to the survey date.

Boaters	Participants
1-6	1
7-10	2
11-14	3
15+	4

### Section 2 Boaters (Long Bend and Harphum)

Survey every fourth group.  
Survey only one boater per group.  
Choose the boater whose birthday is closest to the survey date.  
Six participants (and therefore six groups) should be contacted per day at Long Bend.